DEVELOPMENT OF ELECTRONIC HUMAN RESOURCE MANAGEMENT FOR PUBLIC INSTITUTIONS IN TANZANIA: A CASE OF TANZANIA CIVIL AVIATION AUTHORITY

SUNDAY RAPHAEL WALINDA

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (HUMAN RESOURCE MANAGEMENT) OF THE OPEN UNIVERSITY OF TANZANIA

2013

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the Open University of Tanzania a dissertation entitled*: "Development of Electronic Human Resource Management for public institutions in Tanzania: A case of Tanzania Civil Aviation Authority"*, in fulfillment of the requirements for the degree of Master of Business Administration of the Open University of Tanzania.

……..……

Dr. Chacha Matoka

(Supervisor)

…….

Date

COPYRIGHT

DECLARATION

I**, Sunday Raphael Walinda** declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

……..

Sunday Raphael Walinda

……..

Date

DEDICATION

This dissertation is dedicated to the memory of my late grandfather Michael Walinda and my late grandmother Sigaya Michael Walinda.

ACKNOWLEDGEMENTS

Firstly, I wish to glorify the Almighty God who enabled me all the time to work on this study.

I am greatly indebted to my Supervisor, Dr Chacha Matoka, who supported me throughout my research with professional guidance, moral support and constant encouragement from the beginning to the end of this study. His positive comments and constructive criticism have made this work possible.

My deepest gratitude goes to my wife - Illuminatha Thobias Mwanibingo, for her moral and material support throughout the period of my study. This research could not be possible without her kindness and encouragement.

I also wish to thank the respondents - TCAA employees, who provided me with data and information which enabled me to accomplish this study.

I also wish to extend my gratitude to the management of TCAA for assisting me financially and also for allowing me time to work on the study and for providing material support during the period of my studies.

Lastly, I would like to extend my heartfelt gratitude to my MBA colleagues for their cooperation during my study. In particular I wish to extend special gratitude to Mr. Hamis Salehe Kimweri, Mr. Edward Ndimila, Mr. Jonas Bernad Simwanza and Mr. Gwakisa Nsajigwa for their support and encouragement.

ABSTRACT

This study assessed the Development of Electronic Human Resource Management for public institutions in Tanzania taking the Tanzania Civil Aviation Authority as the case. The study had three specific objectives which were to: assess the technological environment for e- HRM system development; to measure the extent to which management supports e-HRM system development; and to examine the availability and implementation of regulatory frameworks associated with e-HRM system development. The study involved a total of 97 employees of TCAA from seven stations. Data was collected by the use of questionnaires designed in a five points of the Likert Scale. It also made use of observation and documentary reviews. The findings revealed that government institutions have not put enough efforts in creating conducive technological environment for general ICT development. There is poor management support in terms of setting aside budget for e-HRM system, ICT facilities and skills training of employees. There are also no clear regulatory framework including laws, regulations, policies and procedures for managing ICTs within the institution. The study concluded that e-HRM system development is very important in the contemporary world for efficient and effective performance of organizations. The study recommends that in order for e-HRM system development to be successful in organizations, the government should allocate reasonable budget for investing in ICTs development in its departments for ICT skills training of experts and employees, facilities and systems that fit the needs of those organizations. In order to accomplish this, a clear regulatory framework involving policies which support effective ICTs development within government institution must be put in place.

TABE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

ATCO	-	Air Traffic Control Officer
AIO	-	Aeronautical Information Officer
CNS	-	Communication, Navigation and Surveillance
e-HRM	-	Electronic Human Resource Management
ESARBICA	-	Eastern and Southern Africa Regional Branch International Council on Archives,
HRM	-	Human Resource Management
ICT	-	Information Communication Technology
IT	-	Information Technology
ISI	-	Information Society Index
LGAs	-	Local Government Authorities
MDAs	-	Ministries, Departments and Agencies
OECD	-	Organization for Economic Co-operation and Development
PCs	-	Personal Computers
SADC	-	Southern African Development Community
TAM	-	Technology Acceptance Model
TCAA	-	Tanzania Civil Aviation authority
TCRA	-	Tanzania Communications and Regulatory Authority
TRA	-	Theory of Reasoned Action
TTF	-	Task Technology Fit
URT	-	United Republic of Tanzania.

CHAPTER ONE

1.0 INTRODUCTION

This chapter is an introduction and intends to provide background information on the nature of the study and its objectives and purpose. It is divided into six parts. The first part presents background to the problem. The second part presents statement of the problem. The third part presents the objectives of the study. The fourth part presents research questions. The fifth part presents significance of the study and the sixth part presents scope of the study.

1.1 Background to the Problem

A wide range of Human Resource (HR) processes and information can now be managed and devolved by managers and employees through web-based technologies using e-HRM system, with potentially significant benefits in terms of cost reduction and improved service levels (Crestone, 2009).

It is argued that e-HRM system technology can go beyond simple administrative and operational benefits. For example, Strohmeier (2007) suggests that e-HRM system technology is capable of more than simply automating business processes, enabling organizations to become more strategic and flexible as well as cost-efficient, by supporting people management. Several other writers - including Othman (2007), have discussed the potential of shifting away from administrative applications towards supporting people management.

Yeung and Brockbank (2006) have differentiated three dimensions of e-HRM system: operational (cost reduction), relational (improving HR services) and

transformational (improving strategic orientation). Although not necessarily linked, as Ruel *et al.,* (2007) point out, in practice, operational e-HRM system is the prerequisite for relational and transformational HRM. Through these stages as a form of e-HRM system organizations develop more strategic capability.

According to Strohmeier (2007) e-HRM system is the (planning, implementation and) application of information technology for both networking and supporting at least two individual or collective actors in their shared performing of HR activities. The rapid development of the Internet during the last decade has boosted the implementation and application of electronic human resource management (e-HRM system) (Strohmeier, 2007).

In additional to improving delivery of organization HR services, e-HRM system can make organization operations more efficient and also empower organization members by giving them easier access to information and ability to network electronically with others (Laudon & Laudon, 2006).

Despite e-HRM system advantages, many developing countries still lag behind in developing and using e-HRM system. The impetus for the establishment of e-HRM system in developing countries is discerned from the promulgation of policies, legislative and regulatory framework as well as infrastructure development (Mutula, 2010). Although the establishment of e-HRM system in developing countries is gaining momentum, public web sites provide little interaction with the organization members. Most of the public web sites have paid little attention to enhanced targeted user engagement. The e-HRM system in developing countries is still at its infancy. It

is noted that not all African countries have web sites and where they do, they may do not have useful data.

As there is little or no established HR systems architecture, integration and standardization are not achieved resulting in low consistency of HR systems applications and escalating support costs. With the exception of a few MDAs, public sector ICT literacy is also low at all levels. The low readiness of Government employees to embrace ICTs hinders the deployment of ICTs systems and usage. Lack of an overall policy and poor harmonization of initiatives, have led to random adoption of different systems and standards, and in unnecessary duplication of efforts, and waste of scarce resources, especially through the loss of potential synergies.

The level of current ICTs manpower and capacity are inadequate to create a significant impact. ICTs units in MDAs and LGAs and across the public sector need both the advanced technical and management skills to facilitate the innovative use of ICTs. Legislations to regulate electronic transactions and protect electronic information are not in place currently. This has resulted in low confidence in the use of ICTs to enable electronic services.

1.2 Statement of the Problem

The HR function of an organization should comply with the HR needs of the organization. Business functions, strategies, policies and practices have to be implemented to ensure smooth operation of the organization and prepare the organization in such a way that smooth operation is guaranteed in future.

According to Crestone, 2009, to monitor the quality, sustainability, and efficiency of HR, and properly manage the HRM tasks of an organization, HR system is very important. HR systems are very fundamental aspect of an organization's hi-tech infrastructure. It is difficult for an organization to upscale significantly and maintain the accuracy and transparency of its functions without HR system - which is the backbone of ICT innovation for the delivery of HRM services. The use of e-HRM system technology ensures implementation of HR strategies, policies and practices. The e-HRM system technology supports the HR function so as to comply with the HR needs of the organization through web-technology-based channels (Ruel *et al,* 2007).

However, for HR system to really contribute to the efficiency of the public institutions, it has to be accurate and up to date. Institutions find it difficult to maintain updated records as they are located in remote locations which have no access to the internet hence relying on manual data entry and paper based transaction records. The e-HRM system technology provides a gateway which enables managers, employees and HR professionals to view, extract, or alter information which is necessary for managing the HR functions of the organization.

Lawler III (2005) suggests that e-HRM system with its self-service characteristics can be cheap and faster in providing specific HR activities. Despite many ICT benefits, there are many challenges facing organizations in using the ICTs (Frankiewcz, 2003). The majority of institutions have no technical capacity and resources. They have no skills to adopt and implement HR system solutions. In some

cases, there is lack of vision and commitment from management in using technology. Integration is also one of the big challenges as most of the HR system solutions for organizations are built in weak platforms, thus making them inflexible and unscalable to integrate with emerging technologies and delivery channels. Power and communication infrastructure - which is the foundation for hosting ICT services, is sometimes inadequate and unreliable. Most institutions operate in semi-automated mode.

Many institutions in Tanzania face Challenges such as diversity in workforce diversity, technological changes, change management, compensation and benefits, recruiting skilled employees and training and development. Workforce diversity may consist of issues involving age, education, ethnicity, gender, income, marital status, physical limitations, religion, sexual orientation, or any number of other things. Institutions must create HR policies to guide managers in decision making so as to enable them to respond better to the unique needs of employees as individuals. Also technological changes and Change management may force HR manages to change the ways of performing HRM functions. HR managers should be able to deal with their own changing roles in corporate society, in addition to the changes to other jobs, the overlapping responsibilities, and more. Understanding that change is required is the first step toward accepting the change. For the issue of training and development, HR managers and personnel must deal with it diligently. With the need to cut training costs, training itself often suffers. Yet the skills of employee needs must still be taught. Many companies are meeting this challenge by providing eLearning opportunities that allow employees to receive the training they need

without the expenses associated with travel, on-site trainers, hours away from their jobs and high-priced materials.

This research aimed towards analyzing the extent to which government institutions have implemented e-HRM system in providing HRM functions to increase organization performance.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study was to evaluate development of Electronic Human Resource Management for public institutions in Tanzania.

1.3.2 Specific Objectives

(i) To assess the technological environment for e- HRM development in TCAA;

(ii) To measure to what extent TCAA management supports e-HRM system development in TCAA; and

(iii) To examine the availability and implementation of policy and regulatory frameworks associated with e-HRM system development in TCAA.

1.4 Research Questions

(i) What is the impact of technological environment on e- HRM development in TCAA?

(ii) What is the impact of management support on e- HRM development in TCAA?

(iii) What is the impact of policy and regulatory frameworks on e- HRM development in TCAA?

1.5 Significance of the Study

As regards contribution to knowledge, academicians will be able to access the perceived importance of implementing activities electronically thus upscaling efforts to further research and practices.

To practitioners, the study will explore and recommend potential areas that will need to put more efforts when delivering government services. Practitioners will be prepared in handling government sectors' activities in the ever changing business environment. The study is expected to be of much value to policy makers in the sense that, the findings would provide informed suggestions on how policies can be improved and easy to implement.

1.6 Scope of the Study

Due to limited time and resources, the research was conducted in a one selected government agent, namely, Tanzania Civil Aviation Authority (TCAA). Due to the broadened scope of e-HRM system development, it was not possible to cover each and every aspect. Consideration was placed on technological, management policy and regulatory frameworks of e-HRM system development.

CHAPTER TWO

2.0 LITERATURE REVIEW

This part of literature review covers the following areas of the study:-The first part defines key concepts of the study. The second part provides theories of the study. The third part provides general discussions. The fourth part provides empirical literature. The fifth part provides research gap of all literature reviewed during this study. The sixth part provides the conceptual framework developed by the researcher.

2.1 Definition of Key Concepts

In this part, three concepts namely e-HRM system development, Technical Aspects and Policy and Regulatory Framework were defined.

2.1.1 The e-HRM system Development

The e-HRM system development is a way for government and private sector organizations to use the most innovative information and communication technologies, particularly web-based internet applications, to provide employees and businesses with more convenient access of HR information and services, to improve the quality of the HRM services and to provide greater opportunities to participate in issues concerning HR development and processes (LawlerIII, 2005).

In developing countries, Tanzania included, there are efforts to transform HRM operations from manual paper-based to electronic operations in government

departments (Mnjama & Wamukoya, 2007). However, the implementation has been slow and it is faced with various challenges. The e-HRM system is therefore required to bring tremendous impetus with higher quality and cost-effective HRM services and a better relationship between employees and management (Fang, 2002). So far e-HRM system implementation in developing countries like Tanzania is not going on well (International Development research, 2009).

2.1.2 Technical Aspects

The technical aspects include the internal and external technologies that are relevant to the firm. Technologies may include both equipment as well as processes (Tornatzky & Fleisher, 1990). Technical aspects require technology availability associated with decision making with regard to implementation of e-HRM system.

2.1.3 Policy and Regulatory Framework

Policy and Regulatory Framework is existence of necessary infrastructure which supports the control, direction or implementation of a proposed or adopted course of action, rule, principle or law. In this case it involves policies and legislations to regulate electronic transactions and protect electronic information.

2.2 Review of Theoretical Literature

This study was guided by the Change Management Theory, Task Technological Fit Theory and the Technology Acceptance Model.

2.2.1 The Change Management Theory

Lewin (1947) theorized a three-stage model of change that has come to be known as the unfreezing-change-refreeze model that requires prior learning to be rejected and

replaced. Edgar Schein provided further detail for a more comprehensive model of change calling this approach cognitive redefinition (Schein, 1999).

Stage 1 – becoming motivated to change (unfreezing)

This phase of change is built on the theory that human behavior is established by past observational learning and cultural influences. Change requires adding new forces for change or removal of some of the existing factors that are at play in perpetuating the behavior.

Stage 2 – change what needs to be changed (unfrozen and moving to a new state)

Once there is sufficient dissatisfaction with the current conditions and a real desire to make some change exists, it is necessary to identify exactly what needs to be changed. Three possible impacts from processing new information are: words take on new or expanded meaning, concepts are interpreted within a broader context, and there is an adjustment in the scale used in evaluating new input.

Stage 3 – making the change permanent (refreezing)

Refreezing is the final stage where new behavior becomes habitual, which includes developing a new self-concept and identity and establishing new interpersonal relationships.

The e-HRM system implementation process requires technology, management and policies. There is a big chance of success or failure depending on how these three elements are handled. This theory informs us that change must be planned with a series of stages. Firstly, government plans through setting policies and procedures for

management purposes; secondly, implementations using appropriate technologies to ensure changes are exercised and thirdly, refreezing, that is making a change permanent by follow up through regulatory frameworks. Government organs have to reinforce the changes and make sure that the intended changes in IT are accepted and maintained in the future for existence and continuity.

2.2.2 Task Technology Fit (TTF)

As Task Technology Fit Theory, Goodhue and Thompson (1995) argue that, it is more likely to have a positive impact on individual performance, and be used if the capabilities of the IT match the tasks that the user performs. They developed a measure of task-technology fit that consists of eight factors: quality, local ability, authorization, compatibility, ease of use or training, production timeliness, systems reliability and relationship with users. Goodhue and Thompson (1995) found the TTF measure in conjunction with utilization, to be a significant predictor of user reports of improved job performance and effectiveness that was attributed to their use of the system under review.

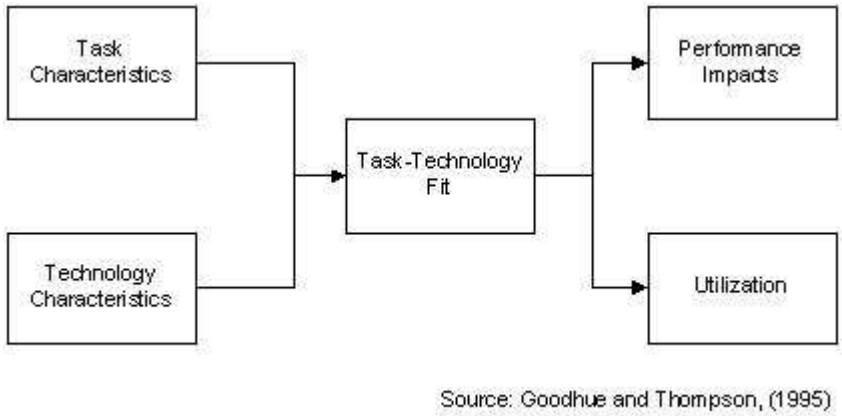

Figure 2.1: Task Technology Fit

Source: Goodhue and Thompson (1995)

TTF has been applied in the context of a diverse range of information systems including electronic commerce systems and combined with or used as an extension of other models related to IS outcomes such as the technology acceptance model (Goodhue & Thompson, 1995).

The technology used and tasks to be done in government institutions must have a good match for acquiring better results. Several issues in government management have to be addressed in order for e-HRM system to succeed. TTF tells us that quality, local ability, authorization, ease of use or training, production timeliness, systems reliability and relationship with users are important factors in e-HRM system development. There must be high level of compatibility in established systems.

2.2.3 Technology Acceptance Model (TAM)

TAM is an adaptation of the Theory of Reasoned Action (TRA) to the field of IS. Based on the Theory of Reasonable Action (Fishbein & Ajzen, 1975) which was developed by Martin Fishbein and Ajzen Icek, Davis (1989) developed the Technology Acceptance Model which deals more specifically with the prediction of the acceptability of an information system.

It has been argued that users develop perception about the usefulness and ease-of-use of various technologies which in turn, influence actual system use. TAM is widely regarded as a relatively robust theoretical model for explaining IT use. TAM is useful for predicting whether users will adopt new information technologies or not (Davis, 1989).

The purpose of this model is to predict the acceptability of a tool and to identify the modifications which must be brought to the system in order to make it acceptable to users. This model provides that the acceptability of an information system is determined by two main factors: perceived ease of use and perceived usefulness.

TAM postulates that the use of an information system is determined by the behavior intention; on the other hand, the behavior intention is determined by the person's attitude towards the use of the system and also by his perception of its utility. According to Davis, the attitude of an individual is not the only factor that determines his use of a system, but is also based on the impact which it may have on his performance. Even if an employee does not welcome an IS, the probability that he will use it is high if he perceives that the system will improve his performance at work. The TAM hypothesizes a direct link between perceived usefulness and perceived ease of use as shown in Figure 2.2.

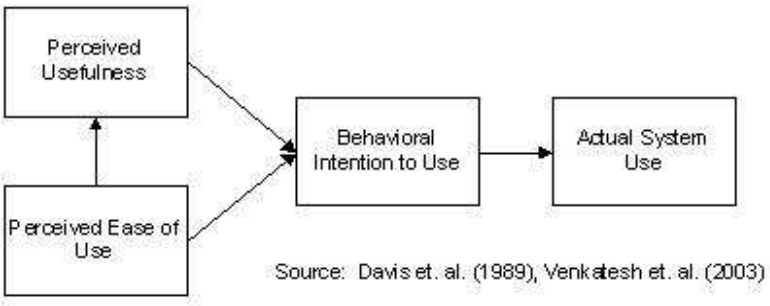

Figure 2.2: Technology Acceptance Model
Source: Davis (1989)

To validate this model, Davis (1989) demonstrates that, the link between the intention to use an IS and perceived usefulness is stronger than perceived ease of use. TAM enables the organizations to determine the perception of employees and users of ICT in facilitating their activities at work places. Employees can comment on

whether they perceive the system as useful to their daily activities; whether it is useful but difficult to use or the other way round or just being easy to use.

The model therefore is very helpful with regard to e-HRM system implementation. The organization officials have to understand the perceptions of users of the systems and take appropriate measures to ensure organizational and users' requirements are met. The systems have to be useful, not only usefulness; the government employees have to perceive their ease of use which will guarantee utilization of instituted e-HRM system facilities and services.

2.2.4 Diffusion of Innovations (DOI)

Rogers (1995) defined Diffusion of Innovations as the process by which an innovation is communicated through certain channels over time among the members of a social system. He regarded DOI as a multidisciplinary theory that has been widely used to explain information system adoption research. According to Rogers (1995), there are five primary factors that have impact on the rate of adoption according to the theory: 1) relative advantage, 2) complexity, 3) compatibility, 4) trialability, and 5) observability.

Relative advantage is the degree to which an innovation is perceived as better than the idea it replaces (Rogers, 1995). Relative advantage of an innovation is closely associated with an individual perception of it. Whether a user believes the innovation as advantageous is more important than whether an innovation has objective advantage over the precedent idea. The theory suggests that the better the perceived relative advantage of an innovation, the more rapid its rate of adoption will be.

Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters (Rogers, 1995). Technical compatibility refers to the level of compatibility between the task being conducted and the technology being used (Cooper & Zmud, 1990). In the case of mobile banking services, this implies that mobile banking service implementation success will be more likely to occur when the nature of the service is compatible with the technology characteristics.

Complexity is the degree to which an innovation is perceived as difficult to understand and use (Rogers, 1995). Technical complexity refers to the level of task complexity related to the innovation. Prior research has shown that there is a negative relationship between the complexity of a technology and its successful implementation (Cooper & Zmud, 1990). In the case of mobile banking service, a higher level of task complexity in service application would be inhibitors in success of the adoption process.

Trialability is the degree to which an innovation may be experimented with on a limited basis (Rogers, 1995). The theory suggests that innovations that can be experimented will, in general, be adopted more quickly than innovations that are not trialable. This is due to the decreased uncertainty gained by experimenting. Observability is the degree to which the results of an innovation are visible to others (Rogers, 1995). Observability stimulates discussion surrounding the innovation as the peer group requests evaluation information about the innovation. The theory suggests that the easier it is for individuals to see the results of an innovation, the more likely they are to implement it.

Rogers (1995) established that the diffusion of innovations theory is a powerful tool and gives solid theoretical background for explaining the implementation of electronic technologies including e-payments, e-commerce, and e-HRM system etc (Lee *et al.*, 2003).

The DOI theory is very important to this study since it explains comparative advantage, complexity and compatibility as key the factors of greater importance in adoption of IS system. For the adoption to be successful the e-HRM system must be compatible to the need of users to satisfy such needs. Hence for implementation of e-HRM system to be successful, organizations should consider the above outlined factors.

2.2.5 Technology, Environment and Organization Framework

Tornatzky & Fleisher, (1990) in their book 'The Processes of Technological Innovation', provide that, the process by which a firm adopts and implements technological innovations is influenced by the technological context, the organizational context, and the environmental context. The technological context includes the internal and external technologies that are relevant to the firm. Technologies may include both equipment as well as processes. The organizational context refers to the characteristics and resources of the firm, including the firm's size, degree of centralization, degree of formalization, managerial structure, Human Resource, amount of slack resources, and linkages among employees. The environmental context includes the size and structure of the industry, the firm's competitors, the macroeconomic context, and the regulatory environment (Tornatzky & Fleisher, 1990).

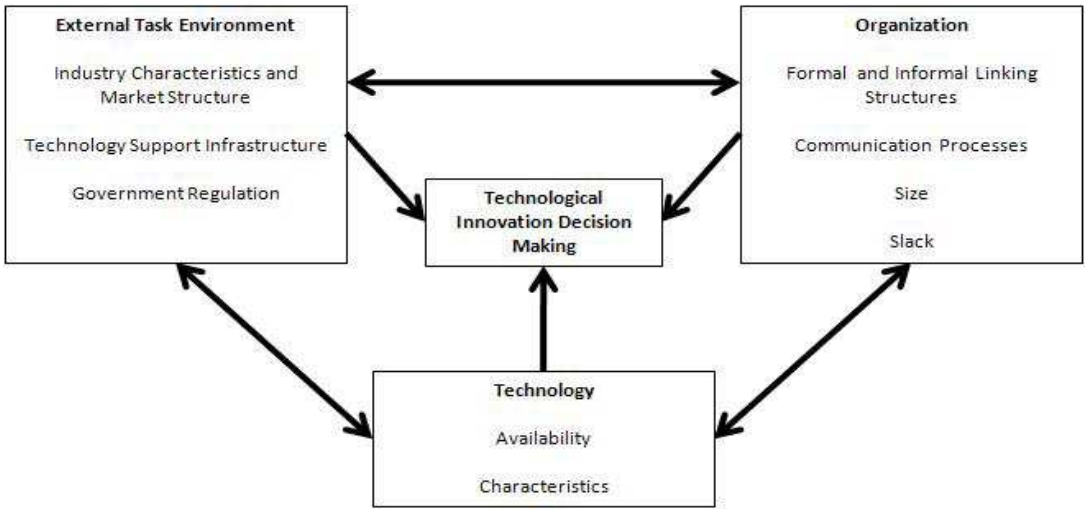

Figure 2.3: Technology, Environment and Organization Framework

Source: (Tornatzky & Fleisher, 1990)

Technology, organization and environment are the key elements for the organizations to tap opportunities associated with innovation while dealing electronically.

2.3 General Discussions

The e-HRM system is a change and it is a process, therefore all change management theories should be applied. Moreover, technology to be well accepted must be a fit between tasks being done and technology applied. A fit only is not sufficient but also the technology must be easy to use and useful (See Figure 2.3 for further clarification). The e-HRM system is the (planning, implementation and) application of information technology for both networking and supporting at least two individual or collective actors in their shared performing of HR activities.

The e-HRM system is featured with mature and highly evolved HRM solution with a wide installed base;- delivers excellent value and productivity to HR department

including access to archived records and documents, connectivity with client's existing information system such as payroll accounting, document systems, security of data and also e-HRM system is user friendly interface.

The e-HRM system is applied in performing some or all Human Resource management functions namely: planning, recruitment and selection, training and development, performance appraisal, compensation, health, safety and labour relations. For example in recruitment and selection, the organization or an institution may post job vacancies in their respective websites and through these different job seekers can apply for the posts electronically without face-to-face interaction. In training and development, the institution may train and develop its employees by using information technology. Thus new skills and knowledge are imparted to the employees through different network systems such as websites and e-mails. In performance appraisal, the process of evaluating employee's performance against stipulated requirements of their jobs during period of performance can be done electronically without face-to-face interaction. The process involves designing electronic systems of appraising performance of individual employees. Through these systems, supervisors and their subordinates may interact without face-to-face contacts. In compensation, through an organisation's electronic systems, employees may be paid electronically for their jobs performed in a particular period. For example, this can be possible through different bank accounts of the employees.

The e-HRM system is very important because it is believed that electronic systems have the potential to lower administrative costs, increase productivity, speed

response times, improve decision-making, and enhance customer service all at the same time. It decreases the paperwork substantially and allows easy access to voluminous data. The employee can also keep track of his/her achievements without having to go through litigious procedures. It uses intranet or other web technology channels. It can also be used for implementation of different HR strategies. The authorization of different HR functions can be distributed through e-HRM system.

Despite the fact that e-HRM system is very advantageous, its use has some challenges, namely, cost implications, aligning e-HRM system with the business requirements, security of the information generated, training the users a crucial issue, return on investment (ROI) on an e-HRM system has to be justified. Initial costs to implement the e-HRM system can be very high and hence the organization may not be able to afford it. Some employees may lack skills and knowledge in using e-HRM system; hence the organization may face some difficulties in implementing e-HRM system. If electronic systems for implementing e-HRM system in the organization are not well secured, may lead to unauthorized people to accessing the data stored in the systems. Hackers may easily interfere with data or employee's particulars in the electronic systems and may distort them.

2.4 Review of Empirical Literature

2.4.1 Technological Environment

Mutiti (2002) conducted a study titled computerisation of archieves and records in ESARBICA region to determine the application of computers in records and archives management, and issues of electronic record keeping within the ESARBICA region.

To collect data, a search of the web sites of archives institutions in the ESARBICA region was conducted. In addition, questionnaires were sent to archival institutions.

The findings showed that computers were used to fulfill a variety of recordkeeping functions, namely word processing, control of holdings, retrieval of records and document imaging. Other findings of the study were that electronic recordkeeping systems were absent, the responsibility of managing electronic records systems was vested in national archival institutions, such as in Botswana, Kenya, South Africa and Zimbabwe, and many archivists were not conversant with ways of managing electronic records. It recommended that national surveys of public institutions be undertaken to take stock of electronic records. This study is very important to establish the extent to which Tanzania has achieved in developing e-HRM system and hence the extent of electronic record keeping.

Wato (2005) investigated e-records readiness in the ESARBICA region. The specific issues studied were policy and legislation, standardization, authenticity, preservation, training and physical infrastructure concerning electronic records. Questionnaires were sent to all National Archives in the ESARBICA region and responses were received from Botswana, Kenya, Mozambique, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

The major findings of the study were that only Tanzania and Mozambique had a national ICT policy. South Africa recognized e-records as authentic records, as supported by the Archives Act. All eight respondents described e-records skills among their staff as inadequate. With regard to empowerment of creators, five

respondents (Kenya, Tanzania, Botswana, South Africa and Mozambique) sensitized record creators on e-records issues. All nine respondents indicated that their national archives had not carried out a survey on the status of e-records created by government bodies. They had no capacity to preserve electronic records due to lack of specialized storage facilities, skills and controlled environment.

A study by Ngulube (2004) titled a double edge sword: Challenges offered by digital edge to the African Information society was conducted to establish how electronic records were managed in 16 selected countries in sub-Saharan Africa (SSA). Data were collected through questionnaires administered on 34 respondents drawn from the National Archives of Angola, Botswana, Kenya, Lesotho, Mozambique, Malawi, Mauritius, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. The major findings of the study were that the surveyed institutions had computers used for word-processing activities. South Africa and Kenya were the only institutions that had procedures for the appraisal and disposition of electronic records, manuals and guidelines, for the management of electronic records in public agencies, as well as personnel with formal training in managing digital records. Other findings were that there was an acute shortage of staff trained to deal with information generated by modern computer technology. Out of the 16 institutions surveyed, only one (6.3 percent) had procedures for periodically migrating records. South Africa was the only country with legislation that specifically addressed the management of electronic records. Researcher found that in Tanzania there still no clear established ICT legal framework to guide proper ICTs development.

Lau (2003) in his paper titled Challenges for E-government Development addressed challenges for e-services development on the 5th Global Forum, in Mexico City. He provided that, e-HRM system services continue to be embedded in the environment of today's public administrations and therefore remain limited by what these administrations are capable and willing, to do. He cited the internal challenges to include: the digital divide, privacy and security concerns and citizen expectations and seamless services.

Another constraint on e-HRM system is the difficulty with which governments are developing services that are customer-focused. External e-HRM system barriers often concern breakdowns, missing components or lack of flexibility in the government-wide frameworks that enable e-services. The result can be an inability to achieve a whole-of-government perspective in e-HRM system implementation. Others include legislative and regulatory barriers, and budgetary barriers. Barriers can also arise for agencies that only focus on putting their own services online, without an eye on the broader government context that governs what they can and cannot do (example, procurement, human resource and budgetary rules). In particular, if they are not well understood, regulatory and financial rules can seem to pose insurmountable barriers to e-HRM system implementation.

ICTs implementation require top officials to take care of technical factors and deal with challenges on implementing e-HRM system in such a way that, what will be initiated has to be accepted used and beneficial to the government sector as a whole without any barrier. All these require a serious strategic consideration.

2.4.2 Management Support

A study conducted by Voermans and van Veldhoven (2007) on attitude towards e-HRM system based on the Technology Acceptance Model (TAM), utilized an online questionnaire, in which 99 managers and 257 employees within Philips (Electronics) Netherlands were participated. It was found that differences in perceived usability of current IT systems, as well as the preferred HR roles strategic partner (high preference) and employee champion (low preference), were related to a positive attitude towards e-HRM system. For managers, user support was also found to be a predictor of a positive attitude towards e-HRM system.

Ruel *et al.*, (2004) conducted an explorative empirical study in the use of e-HRM system to harmonize HR policies and practices in five large companies on web-based HRM in Germany using quantitative survey. They found that international companies seem to use the introduction of e-HRM system to standardize HR policies and processes. Further, there was a 'gap' between e-HRM system in a technical sense and e-HRM system in a practical sense in the five companies involved in their study. Finally, e-HRM system hardly helped to improve employee competences, but resulted in cost reduction and a reduction of the administrative burden.

Strohmeier and Kabst (2009) examined the factors that influence the cross-national organizational implementation of e-HRM system in Europe. Major general and contextual influence factors were derived and tested based on a large-scale survey with a sample of 2,336 organizations in 23 European countries using logistic regression. It was revealed that e-HRM system is a common practice throughout

Europe since two-thirds of all organizations have already adopted e-HRM system. They also found that major determinants of e-HRM system adoption are size, work organization, configuration of HRM and organizations' management willingness to support implementation of technology.

In their study, Ruel *et al.,* (2007) examined the contribution of e-HRM system to HRM effectiveness. The research design was based on quantitative survey approach using questionnaire. Their study was conducted in the Ministry of Internal Affairs in The Netherlands, where e-HRM system in the form of employee self-service applications was introduced. They found that individual assessment of e-HRM system applications influences HRM technical and strategic effectiveness. This is especially so in the perceived quality of the content and the structure of e-HRM system applications which have a significant and positive effect on technical and strategic HRM effectiveness. They also found that the basic expectations are that using e-HRM system will decrease costs, will improve the HR service level and will give the HR department space to become a strategic partner.

Koh *et al.,* (2006) performed a study to examine how information technology, strategic planning processes, and organization interact in an emerging e-services environment. They used a discriminant model to test the ability to distinguish between the perceptions of high and low importance of six major e-services functions as a function of a four-item strategic e-government readiness scale. An empirical study of a municipal government supported the discriminant model. Through their study, it was observed that, government agencies must evaluate how

strategic e-HRM system plans are developed, communicated, and integrated into the work environment. Without the proper understanding of the importance of e-HRM system initiatives, employees do not place high value on e-HRM system initiatives. Furthermore, government agencies must ensure that their IT plans are aligned with business strategies as they attempt to expand their e-HRM system services. It is also important that the content and organizational importance of the strategic plans be effectively communicated to employees. IT management requires proper strategic plans. On top of making such plans, government sectors should ensure high level of interaction among IT, strategic planning process and people. Employees should be well informed on the e-HRM system strategies for the achievement of desired objectives.

2.4.3 Infrastructure and Legal Framework

Governments all over the world are adopting modern ICTs as a tool for providing effective and efficient services to their citizens (Mnjama & Wamukoya, 2007)**.** Mnjama and Wamukoya (2007) conducted a study on e-government and Record Management having a purpose of indicating that, with the proliferation of ICTs, electronic records are being generated in many public sector organizations in Africa, which has resulted in many challenges hitherto never experienced by archivists and records managers. They reviewed literature on ICTs, records management and e-governance and the challenges faced by archivists and records managers particularly in developing countries as they deal with records generated by ICTs.

Their findings showed that, while many governments have systems and procedures for managing paper-based records, the same cannot be said for electronic records and

other digital images. This implies without proper planning and adoption of various methods, e-records created using modern ICTs are likely to become inaccessible in the future, thus compromising the ability to remain accountable to the citizens. In addition, while various e-records readiness tools are available in the West, none of them addresses e-records readiness issues in Africa where systems and procedures for managing records both paper and electronic are inadequate. They argued further that there is every reason for African governments to re-assess their e-records readiness as they move towards implementing e-HRM system initiatives.

African governments and Tanzania in particular experience limited resources and facilities for e-records facilitation. It is crucial that the management of e-records must be supported by clear policies, procedures and guidelines if they are to retain their evidential values that are needed for accountable and transparent governance. Conducive environment is required to be instituted by the government to ensure e-record is facilitated for enhancing efficiency and effectiveness in government sectors' operations.

Mutula (2008) carried out a study based on quantitative survey approach titled 'comparison of sub-Saharan Africa' which was meant to compare the ICT status of sub-Saharan African countries with developed and transitional countries. Besides, analysis of global e-services, digital opportunity and information society indices were used. He found that, wide disparities in e-HRM system exist within regional trading blocs in sub-Saharan Africa with Southern Africa far ahead of East and West Africa regions. Compared with other continents, sub-Saharan Africa lags far behind

Europe, North America and Asia in e-government. Several barriers including infrastructure, policy, legal and skill factors are identified as limiting the opportunity for sub-Saharan Africa to move government services online.

In his study, Mutula (2010) recommended that, Africa must invest more in infrastructure and enhance a legislative and policy framework to effectively compete with developed and transitional nations not only in e-services, but also in international economy. Moreover, Africa can learn from the experiences and best practices of developed and transitional countries in e-HRM system development. Tanzania like any other African country has to strive on investment in infrastructure and provide conducive environment in relation to legislative and policy framework to effectively utilize ICTs especially in e-HRM system activities for the nation's performance.

Sajane (2004) conducted a study to investigate the management of electronic records in the public sector in Lesotho. He looked at the electronic records which were currently created and the strategies and policies used in managing them. Interview schedules and observation were employed to collect data from records management personnel from 19 ministries and the national archivist. The study revealed that the public sector in Lesotho was not managing its electronic records satisfactorily. It was further established that the public sector did not only have legislation that specifically dealt with managing electronic records, but also lacked written policies, strategies and guidelines. There were no qualified personnel with the expertise and skills to manage electronic records in the public sector. Sajane's study recommended

the need for the public sector to be allocated more resources and IT infrastructure, that staff be trained and policies formulated. Other recommendations were that legislation be amended to accommodate electronic records and that the public sector adopted the South African electronic records management model.

2.5 Research Gap

Tanzania has been insisting on the use of ICT in organizations. The national ICT policy of 2003 emphasizes on the use of automation in delivering services. The impact of e-HRM system technology on the HR system however, is dependent on the way the technology is used. It is dependent on what and how the technology supports the HR function but also on how the technology is constructed.

Despite of establishment of ICT policy (URT, 2003) and efforts by the government on use of automation, there is still little achievement obtained from implementing e-HRM system. For example in many organizations managers are unable to access relevant information and data online so as to conduct analysis, make decisions and communicate with others timely. They rely mainly on paper work (manual) communications. On the other side employees are unable to access any directives including updating of personal information. Data accuracy and time cycle is also a problem. Thus there is a need to establish the extent to how e-HRM system has been implemented in public institutions so as to take proper measures to enhance e-HRM system applications with immediate benefits.

The study aimed at evaluating e-HRM system development for public institution in Tanzania. The context in which e-HRM system is taking place and the ability of

organizations to respond to the external pressures are determinant for the ultimate success of e-HRM system. The conceptual framework below explains the relationship between independent variables (technological environment, management support and regulatory framework) and dependent variable (e-HRM system development). Independent variables are interacting in groups which in their combination together they greatly influence development of e-HRM system within organizations.

2.6 Conceptual Framework

This study establishes relationship between variables; it studies problems and situations with the main purpose of explaining relationship between variables as shown in Figure 2.4. The variables are Technological Environment, Management Support, Regulatory Framework and e-HRM system development.

The e-HRM system development is a dependent variable and it includes factors such as adequate staff, adequate ICT facilities, review of ICTs manuals and adequate budget for ICTs within the organization. These factors are influenced by independent variables namely technological environment, management support and regulatory framework within the organization. For example presence of adequate facilities depends on adequate budget set by management within the organization. Technological environment, management support and regulatory framework factors are obviously of relevance for e-HRM system development. For instance, on the individual and organization level, availability of computerized system- which enables effective online communications, availability of other reliable ICT

infrastructures and well established ICT section with sufficient experts, will lead to effective utilization of e-HRM system to provide great outcomes in the organizations.

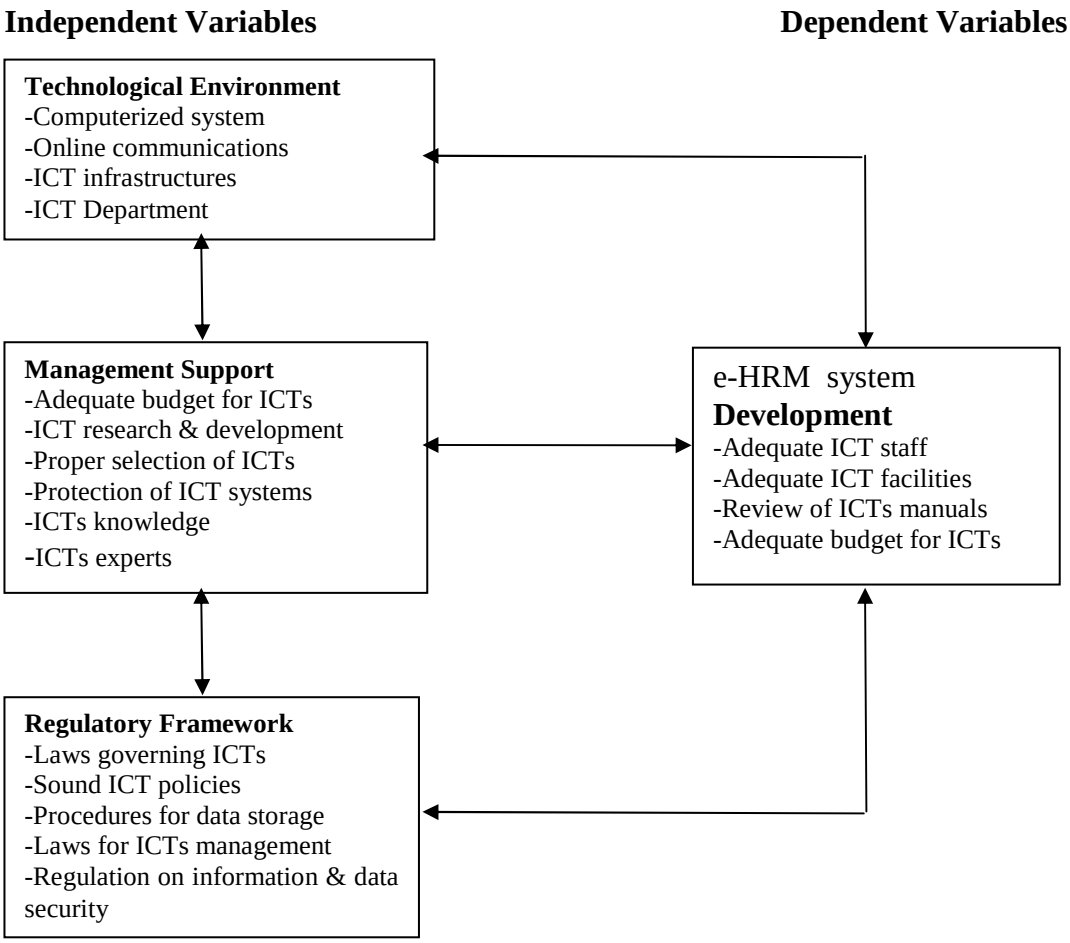

Figure 2.4: Conceptual Framework

Source: Developed by the researcher (2013)

On the other hand, management support has great contribution on ICTs systems development. Management support factors utilized in this research include setting of adequate budget for ICTs, issues like research and development and proper selection of relevant ICTs to organizations. Also management support factors include issues of

protection of ICT systems and provision of ICT knowledge, skills and training to users. All these have influence on e-HRM system development.

The e-HRM system regulatory framework in this study involves laws governing ICTs, Sound ICT policies, procedures for data storage, Laws for ICTs management and regulations on information and data security. The conceptual model has mapped three independent variables which relate to each other and providing concurrent effect on e-HRM system development. As said previously, the variables are technological environment for e-HRM system development, for effective management support and regulatory framework in e-HRM system development. The framework assumes multiple relations within and between technological environment management support and regulatory framework which all together influence development of e-HRM system. The existence of such relationships has clearly subjected to research too.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

Kimweri(2012) refers methodology as a systematic study of the method used by a Science (social or natural), a logic analysis of research procedure and critical analysis of basic assumptions given. Research methodology is thus about relationship between theories and methods of reaching conclusion about nature of the real world. Research method is a systematic and orderly approach taken towards the collection and analysis of data so that information can be obtained from those data. This chapter indicates how the whole study was carried out. It covers the following areas of the study:

The first part provides research paradigm. The second part provides research design. The third part provides data collection. The fourth part provides data analysis. The fifth part provides data validity. The sixth part provides data reliability. The seventh part provides data confidentiality. The eighth part discusses on rapport.

3.2 Research Paradigm

The research employed interpretivism philosophy to understand the differences between humans in our role as social actors. (Saunders, Thornhill, & Lewis, 2009). Interpretivisim philosophy is based on how we interpret the world around us in our role as social actors. In this study the researcher adopted a descriptive cross sectional research since the study was qualitative in nature. According to Kothari (2004), descriptive research design is concerned with describing the characteristics of a

particular individual or group. It has advantage of providing information from many respondents through structured interview and questionnaires.

3.3 Research Design

The research was based on qualitative descriptive cross sectional approach due to its flexibility to get answers (Pataraporn, 2007). Descriptive study is concerned with whether certain variables are associated. Survey strategy was also used since it allowed collection of large amount of data from sizable population in highly economic way, and tends to be used for exploratory and descriptive research. Survey strategy enabled the researcher to collect qualitative data which could be analyzed qualitatively using descriptive and inferential statistics (Baradyana & Ame, 2005). The data was collected by survey strategy was used to suggest possible reasons for particular relationships between variables and to produce models of these relationships (Saunders, Thornhill, & Lewis, 2009).

3.3.1 Area of the Study

The areas of the study were Arusha, Dar es Salaam, Kigoma, Kilimanjaro, Mwanza, Tanga and Zanzibar airports where TCAA has its regional offices. TCAA was used as a case study to represent other institutions in the public sector. The reasons for selecting TCAA among the existing public sector institutions is based on the accessibility of required data to the researcher who is an employee of TCAA and has good relationship with respondents who are co-workers. The researcher was also familiar with TCAA environment.

3.3.2 Population

The total population comprised of 97 respondents. The sample size was selected according as shown in Table 3.1

Table 3.1: Frequency Distribution of Occupation of Respondents

Occupation	Frequency	Percent
ATCO	45	46.4
AIO	22	22.7
IT	6	6.2
Management	13	13.4
CNS	11	11.3
Total	97	100.0

Source: Researcher's Field Data (2013)

3.3.3 Sample and Sampling Technique

In this study, a purposeful sampling technique was applied. Purposeful sampling has been explained as a procedure in which samples are selected deliberately by the researcher from respondents who provided genuine information on what the research is all about (Dalen 1979). In this study samples from TCAA employees who were chosen in expectation of providing required data by focusing respondents with expertise or experiences with regard to e-HRM system.

3.4 Data Collection

Data is anything given or admitted as a fact and which a research influence was based (Kimweri, 2012). It is anything or assumed used as a basis for reckoning. This study used both primary and secondary data for its validity and reliability.

3.4.1 Methods of Data Collection

The most popular instruments for data collection in research are questionnaires, interviews, observations and document analysis, which some of them had been used by this study. Instruments refer to the tools to be used for collecting data and how those tools were developed. (Kimweri, 2012).

3.4.2 Primary Data

The researcher obtained data from primary sources by the using questionnaires. Questionnaires were sent to selected TCAA employees. A simple questionnaire was designed and supplied directly to TCAA employees to fill in. The questionnaires were designed in a way to easily be self-administered. Self-administered questionnaire are easy to administer and to provide quick responses. In this way, the analysis is faster and suitable for computer based research methods (Jarvinen, 2004). Additional visits were made in cases where the questionnaires were not filled and picked on the first visit.

3.4.3 Secondary Data

Secondary data were obtained from different literature sources including published journals, documented information, textbooks, newspapers and TCAA files. Secondary data were used to support primary data collected through questionnaires.

3.5 Data Analysis

Both qualitative and quantitative approaches were used during data analysis. Software Package for Statistical Sciences (SPSS) was used because it produces

simple frequency tables and charts. The researcher interpreted data in accordance to the quality of the arguments made rather than quantity of the respondents with the same opinions. The questionnaires were classified in terms of the answers that were similar so as to reduce the work of analyzing each questionnaire.

The collected data required classification and analysis through the use of conceptualization. Furthermore; data analysis was done through the help of SPSS. The defined research questions were analyzed and assessed by using the mentioned technique in order to establish the statistical evidence that management, technology and legal and regulatory frameworks have impact on e-HRM system development.

3.6 Data Validity

Data collected were checked for completeness, correctness, and reasonability to ensure high level of validity through testing and analysis before making interpretation of the results. To increase content validity of the research instrument, the questionnaire was pre-tested to establish the suitability of the questions. Some questions were reviewed and others discarded based on the comments and suggestions from the respondents.

3.7 Data Reliability

Reliability is the extent to which data collection process yields consistent results, that is, stability, accuracy and dependability of data (Burns, 2000). It is concerned with robustness of the tool whether or not it will produce consistent findings at different times and under different conditions. (Carmines & Zeller, 1979), as a general rule it

is believed that reliabilities should not be below 0.8 for widely used scales, since at this level, correlations are attenuated very little by random measurement error. Cronbanch & Richard (2004) posits that the proposed level of reliability is normally above 0.7. In this study, the reliability of the instrument was tested using Cronbach's alpha coefficient above 0.7 as referred in Table 4.4.

3.8 Data Confidentiality

Confidentiality is a set of rules or premises that limits access or places restrictions on certain types of information**.** Confidentiality has also been defined by the International Organization for Standardization (ISO) as the process of ensuring that information is accessible only to those authorized to have access" and it is one of the cornerstones of information security. To ensure data collected were confidentially maintained, the researcher used anonymous questionnaires which did not require the respondents to write their names on them. The filled questionnaires from the respective respondents were also not seen by others; they were secretly kept by the researcher.

3.9 Rapport

Rapport can be defined as a close and harmonious relationship in which there is a common understanding. The researcher supplied many questionnaires to senior and experienced employees to obtain consistent information. These employees have –on the average, long years of service in the organization. Thus they have great experience in the organization.

CHAPTER FOUR

4.0 RESEARCH FINDINGS, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter discusses the findings of the study based on the data collected and the analysis conducted. The findings of the study are based on 97 returned perfect filled questionnaires out of 110 questionnaires distributed. This chapter analyses data obtained from the field by running them through SPSS software. The analysis was guided by research questions and the research objectives. The results of the analysis are displayed in tables and figures with sample frequencies and percentages.

4.2 Characteristics of the Respondents

The characteristics of the respondents were categorized in terms of sex, job and age.

4.2.1 Sex of the Respondents

In the course of data analysis, the research findings revealed that more than three quarters of all the respondents were males, while less than one quarter of the respondents were females. The results show that TCAA has large number of male employees compared to female employees as shown in Table 4.1.

Table 4.1: Frequency Distribution of the Sex of Respondents

Sex	Frequency	Percent
Male	76	78.4
Female	21	21.6
Total	97	100.0

Source: Researcher's Field Data (2013)

4.2.2 Job of Respondents

Data analysis revealed 46.4% the respondents were ATCOs. About 22.7% of respondents were AIOs. The respondents from IT section were 6.2%, Management section were 13.4% and CNS section were 11.3%. Thus majority of TCAA employees about 80.4% are from ATCO, AIO and CNS sections collectively known as ANS department, as indicated in Table 4.2.

Table 4.2: Frequency Distribution of Occupation of Respondents

Occupation	Frequency	Percent
ATCO	45	46.4
AIO	22	22.7
IT	6	6.2
Management	13	13.4
CNS	11	11.3
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.2.3 Age of the Respondents

The respondents' age ranged from twenty one years of age to over fifty years. The respondents of the age between 31 and 40 years scored high frequency corresponding to 41.2% of all respondents. The other respondents frequency by age include age between 41 to 50 years were 24.7%, the age between 21 to 30 years comprised 13.4% of the total respondents. Respondents over 50 years of age comprised 20.6% of all respondents as presented in Table 4.3. Most respondents belonged to average age groups of between 31 to 40 years and 41 to 50 years.

Table 4.3: Frequency Distribution of the Age Respondent

Age (Years)	Frequency	Percent
21 - 30	13	13.4
31-40	40	41.2
41 -50	24	24.7
Above 50	20	20.6
Total	97	100.0

Source: Researcher's Field Data (2013)

4.2.4 Summary of Respondents' Characteristics

About more than 60% of respondents in this study were employees from ANS department aged between 31 to 50 years of age. These ranges of age represent workforce which is active and is affected with changes of technology which are taking place within the organizations. These employees have –on the average, long years of service in the organization. Thus they have great experience in the organization. As regards gender distributions, males were much more than females who participated in this study. Findings indicated that 78.4% of respondents were males, while female respondents represented 21.6% all respondents. The difference in frequency in terms of gender of respondents can be explained partly by socio – cultural backgrounds were males are more favored than females in various areas of education and employment.

4.3 Data Quality

To ensure data quality, a data cleaning process was performed. Out of 110 employees who were target to answer the questionnaires, only ninety seven (97) copies accepted to fill them, giving a response rate of 88 percent. Each copy was

inspected and corrected for the purpose of detecting errors as well as cleaning before being coded in my computer. Inspection and correction was done in two ways; firstly, in the field and secondly, during the process of coding the data. In the field the data were inspected in order to the ninety seven (97) copies of the questionnaire filled. As elaborated by Churchill (1996), questionnaires should provide proper quality of research information.

4.3.1 Data Reliability

Reliability is the ability to obtain similar results by measuring an object, trait or construct with an independent but comparable measurers (Churchill & Brown, 2006). In this study the internal consistency of the scale used to design tools was obtained by computing the Cronbach Alpha coefficient of reliability whose accepted values range between 0 and 1.

Table 4.4: Reliability Test Results

Scale	Cronbanch's alpha	No. of Items
Technological environment	0.853	5
Management support	0.790	5
Regulatory framework	0.816	5
e-HRM system development	0.803	5

Source: Researcher's Field Data (2013)

Cronbach's coefficient alpha was calculated for each part of the questionnaire using SPSS software. The resulting value for each parameter is tabulated in Table 4.4. Nunnally and Bernstein (1978) recommend that Cronbach's alpha coefficient of more than 0.70 makes the scale reliable. The higher the value of the coefficient, the

more reliable the construct. This observation show that data used had accepted level of internal consistency. In this study the result of Cronbach's alpha coefficients for all parameters were above 0.70, which confirms that the internal consistency reliability is high and hence reliable.

4.3.2 Validity

Validity is the ability of the research study to measure what it claims to measure. Validity is thus a measure of any kind that measures all of which is supposed to measure (Churchill & Brown, 2006). Validity suggests fruitfulness and refers to the match between construct or the way a researcher conceptualizes the idea in a conceptual definition, and the data. It refers on how well an idea about reality 'fits' in with actual reality. The validity of the research increases by using various sources of evidence (Yin, 2003). At least one of the independent variables should be linearly related to the dependent variable; otherwise the model is not valid (Luck & Rubin, 2006).

To ensure validity of the data collected, ten copies of the questionnaire were distributed to the respondents for pre-testing in order to test understandability of the questions and correct misconceptions that might appear. This test ensured that the questionnaire was appropriate and understandable. Therefore, the collected data was valid for this study since construct variables is assumed to be factual and the review studies were dealing with the subjects which the researcher wished to address. Moreover, these steps assisted this research to establish correct operational measures for the studied variables and find out credible relationship.

4.3.3 Summary on Data Quality

The data were carefully screened for the purpose of checking its reliability and validity. The process involved checking for missing data, errors, editing, and appropriate coding to ensure the data entered for analysis are accurate, consistent, appropriately coded and uniformly entered. The reliability of the scale was measured with Cronbanch's alpha coefficient. Since the Cronbanch's alpha coefficient in all variables was greater than 0.70, which confirms that the internal consistency reliability is high, the researcher concluded that the data collected was reliable. Therefore, the researcher ensured data quality was by checking and testing data to meet the conditions for reliability and validity.

4.3.4 Presentation of Findings on the Availability of Technological Environment in TCAA

The first research objective of this study intended to determine the availability of Technological Environment in TCAA. Respondents were asked to rank various statements concerning availability of technological environment in TCAA. The ratings were measured using a five-point Likert Scale, where the different agreement/disagreement levels were rated as follows: 1- Strongly Agree; 2- Agree; 3- Neutral; 4- Disagree; 5- Strongly Disagree.

4.3.4.1 Availability a Computerized system for Performing Activities Electronically

Respondents were asked to give their views on whether there was a computerized system for performing activities electronically in TCAA. Activities which can be performed electronically in TCAA include Human Resource planning, recruitment

and selection, training and development, performance appraisal and compensation. Other activities are air traffic control services, aeronautical information services and CNS. The results indicated that 15 (15.5%) of respondents strongly agreed, 65 (67%) agreed, 6 (6.2%) were neutral, 10 (10.3%) disagreed and 1 (1.0%) strongly disagreed as presented in Table 4.5.

Table 4.5: There is computerized system performing activities electronically

	Frequency	**Percent**
Strongly Agree	15	15.5
Agree	65	67.0
Neither	6	6.2
Disagree	10	10.3
Strongly Disagree	1	1.0
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

Table 4.6: TCAA Management do take Lead on Online Communication

	Frequency	Percent
Strongly Agree	6	6.2
Agree	23	23.7
Neither	10	10.3
Disagree	55	56.7
Strongly Disagree	3	3.1
Total	97	100.0

Source: Researcher's Field Data (2013)

4.3.4.2 Whether TCAA Management do take Lead on Online Communication

The study investigated whether TCAA management played a leading role in online communication. The results revealed that 6 (6.2%) respondents strongly agreed, 23(23.7%) agreed, 10 (10.3%) were neutral, 55 (56.7%) disagreed and 3 (3.1%) strongly disagreed. The results are summarized in the Table 4.6.

4.3.4.3 Presence of Standards and Procedures in Operating ICTs

The study intended to investigate on presence of standards and procedures in operating ICTs in the organization. 13 (13.4%) of respondents agreed, 40 (41.2%) agreed, 38 (39.2%) stayed in neutral position, 4(4.1) % disagreed and 2 (2.1%) strongly disagreed. The results were as shown in Table 4.7.

Table 4.7: There are Standards and Procedures in Operating ICTs

	Frequency	Percent
Strongly Agree	13	13.4
Agree	40	41.2
Neither	38	39.2
Disagree	4	4.1
Strongly Disagree	2	2.1
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.3.4.4 Existence of Procedure Manuals for Managing ICTs in TCAA

The researcher intended to find out if procedure manuals existed for managing ICTs in TCAA (their organization). Respondents were asked whether 'procedure manuals exist for managing ICTs in their organization'. The findings revealed that 9 (9.3%)

strongly agreed, 35 (36.1%) agreed, 40 (41.2%) were neutral, 7 (7.2%) disagreed and 6 (6.2%) strongly disagreed as presented in Table 4.8.

Table 4.8: TCAA Procedure Manuals Exist for Managing ICTs

	Frequency	Percent
Strongly Agree	9	9.3
Agree	35	36.1
Neither	40	41.2
Disagree	7	7.2
Strongly Disagree	6	6.2
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

Table 4.9: TCAA has a Section which has been Charged with Responsibility of Managing Organization ICTs

	Frequency	Percent
Strongly Agree	37	38.1
Agree	44	45.4
Neither	11	11.3
Disagree	4	4.1
Strongly Disagree	1	1.0
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.3.4.5 Existence of a Section in TCAA Charged with the Responsibility of Managing Organization ICTs

The researcher intended to investigate if there is designated unit for managing ICTs within the organization in which the respondents were asked to show their views on whether 'TCAA had a section charged with the responsibility of managing the organization's ICTs'. The findings revealed that 37 (38.1%) strongly agreed, 44 (45.4%) agreed, 11 (11.3%) were neutral, 4(4.1%) disagreed and 1 (1.0%) strongly disagreed. Generally, 81 (83.5%) agreed that TCAA has a section which has been charged with responsibility of managing organization ICTs as shown in Table 4.9.

Table 4.10: There Are Laws Governing Management of Public Sector ICTs

	Frequency	Percent
Strongly Agree	9	9.3
Agree	38	39.2
Neither	44	45.4
Disagree	3	3.1
Strongly Disagree	3	3.1
Total	**97**	**100.0**

Source: **Researcher's Field Data (2013)**

4.3.5 Presentation of Findings on the Availability of Management Support in TCAA

4.3.5.1 Presence of Laws Governing Management of Public Sector ICTs

The study intended to investigate on presence of laws governing management of public sector ICTs in their organization. Responses showed that, 9(9.3%) of respondents strongly agreed, 38(39.2%) agreed, 44 (45.4%) stayed in neutral

position, 3(3.1) % disagreed and 3 (3.1%) strongly disagreed. The results were as shown in Table 4.10.

4.3.5.2 Presence of Policies for Management of ICTs

Respondents were requested to give their views on whether policies had been developed for management of ICTs. Findings revealed that 7 (7.2%) strongly agreed, 30 (30.9%) agreed, 41 (42.3%) were neutral, 8 (8.2%) disagreed and 11 (11.3%) strongly disagreed as indicated in Table 4.11.

Table 4. 11: Policies have been Developed for Management of ICTs

	Frequency	Percent
Strongly Agree	7	7.2
Agree	30	30.9
Neither	41	42.3
Disagree	8	8.2
Strongly Disagree	11	11.3
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.3.5.3 Adequate Budgets set for ICTs' Training and Development

The study intended to investigate if adequate budgets were set for ICTs' training and development within the organization. The respondents were asked to provide their views on whether adequate budgets are set on ICTs' training and development. The findings revealed that 6 (6.2%) strongly agreed, 17 (17.4%) agreed, 12 (12.4%) were

neutral, 40(41.3%) disagreed and 22 (22.7%) strongly disagreed as shown in Table 4.12.

Table 4.12: Adequate Budgets Set on ICTs' Training and Development

	Frequency	Percent
Strongly Agree	6	6.2
Agree	17	17.4
Neither	12	12.4
Disagree	40	41.3
Strongly Disagree	22	22.7
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.3.5.4 Existence of Research and Development

The researcher intended to investigate if there are policies for enabling research and development on technological changes within the organization. The findings revealed that 1 (1.0%) strongly agreed, 13 (12.4%) agreed, 12(12.4%) were neutral, 36(37.1%) disagreed and 35 (36.1%) strongly disagreed as indicated in Table 4.13.

Table 4.13: Existence of Research and Development

	Frequency	Percent
Strongly Agree	1	1.0
Agree	13	13.4
Neither	12	12.4
Disagree	36	37.1
Strongly Disagree	35	36.1
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.3.5.5 Existence of Policy to Enable Selection and Availability of System Software

Respondents were requested to give their views on whether policy regarding selection of software system was available. Findings revealed that 7 (7.2%) strongly agreed, 11 (11.3%) agreed, 29 (29.9%) were neutral, 40(41.2%) disagreed and 10 (10.3%) strongly disagreed as presented in Table 4.14.

Table 4.14: Policy Regarding Selection of Software System is Available

	Frequency	Percent
Strongly Agree	7	7.2
Agree	11	11.3
Neither	29	29.9
Disagree	40	41.2
Strongly Disagree	10	10.3
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.3.6 Presentation of Findings on the Availability of Regulatory Framework on ICTs

4.3.6.1 Presence of Regular Migrations of Information from One Medium to Another

Respondents were asked to provide their views whether there are regular migrations of information from one medium to another within the organization. The findings revealed that 11 (11.3%) strongly agreed, 7 (7.2%) disagreed, 28 (28.9%) were neutral, 47 (48.5%) disagreed and 4(4.1%) strongly disagreed. The findings are presented in Table 4.15.

Table 4.15: There are Regular Migrations of Information from One Medium to Another

	Frequency	Percent
Strongly Agree	11	11.3
Agree	7	7.2
Neither	28	28.9
Disagree	47	48.5
Strongly Disagree	4	4.1
Total	**97**	**100.0**

Source: **Researcher's Field Data (2013)**

4.3.6.2 Documentation of Procedures for Data Migration

The study intended to investigate whether Procedures for data migration are documented in their organization. Responses showed that, 6(6.2%) of respondents strongly agreed, 18(18.5%) agreed, 58 (59.8%) were neutral, 9(9.3) % disagreed and 6 (6.2%) strongly disagreed. The results were as shown in Table 4.16.

Table 4.16: Procedures for Data Migration are Documented

	Frequency	Percent
Strongly Agree	6	6.2
Agree	18	18.5
Neither	58	59.8
Disagree	9	9.3
Strongly Disagree	6	6.2
Total	**97**	**100**

Source: Researcher's Field Data (2013)

4.3.6.3 Presence of Procedure Manuals for Managing Stages of Activities. Stages of Activities Mean Steps or Sequence of Tasks or Jobs

The researcher intended to investigate if there were procedure manuals for managing stages of activities such as provision air traffic control services, aeronautical information services and CNS services within the organization. The findings revealed that 6 (6.2%) strongly agreed, 32 (33%) agreed, 47 (48.5%) were neutral, 6(6.2%) disagreed and 6 (6.2%) strongly disagreed as indicated in Table 4.17.

Table 4.17: Manuals Provide Procedures for Managing Stages of Activities

	Frequency	**Percent**
Strongly Agree	6	6.2
Agree	32	33.0
Neither	47	48.5
Disagree	6	6.2
Strongly Disagree	6	6.2
Total	**97**	**100**

Source: **Researcher's Field Data (2013)**

4.3.6.4 Protection of the System from Unauthorized Access

The study intended to investigate whether the system is protected from unauthorized access. Findings revealed that 18 (18.6%) strongly agreed, 23 (23.7%) agreed, 47 (48.5%) were neutral, 2 (2.1%) disagreed and 7 (7.2%) strongly disagreed. Majority of respondents 47(48.5%) were not aware if the system was protected from unauthorized access as stipulated in Table 4.18.

Table 4.18: The System is Protected from Unauthorized Access

	Frequency	Percent
Strongly Agree	18	18.6
Agree	47	48.5
Neither	23	23.7
Disagree	2	2.1
Strongly Disagree	7	7.2
Total	**97**	**100**

Source: **Researcher's Field Data (2013)**

4.3.6.5 Staff Awareness on ICTs' Strategies

The researcher intended to investigate organization staff are well informed on organization ICTs' strategies. Findings revealed that 6 (6.2%) strongly agreed, 8 (8.2%) agreed, 10 (10.3%) were neutral, 60(61.9%) disagreed and 13 (13.4%) strongly disagreed. The findings are as shown in Table 4.19.

Table 4.19: Staff are Aware on ICTs' Strategies

	Frequency	Percent
Strongly Agree	6	6.2
Agree	8	8.2
Neither	10	10.3
Disagree	60	61.9
Strongly Disagree	13	13.4
Total	**97**	**100**

Source: **Researcher's Field Data (2013)**

4.3.7 Presentation of Findings on e-HRM system Development in TCAA

4.3.7.1 Regular Review of Procedure Manuals to Comply with ICT Changes

Respondents were requested to give their views on whether procedure manuals were reviewed regularly to comply with ICTs' changes. Findings revealed that 8 (8.2%) strongly agreed, 10 (10.3%) agreed, 34 (35.1%) were neutral, 40 (41.2%) disagreed and 5 (5.2%) strongly disagreed as indicated in Table 4.20.

Table 4.20: Procedure Manuals are Regularly Reviewed to Comply with ICTs' Changes

	Frequency	**Percent**
Strongly Agree	8	8.2
Agree	10	10.3
Neither	34	35.1
Disagree	40	41.2
Strongly Disagree	5	5.2
Total	**97**	**100**

Source: Researcher's Field Data (2013)

4.3.7.2 Adequate Training of Staff to Manage ICTs

The study intended to investigate whether the Staff are adequately trained to manage ICTs. Findings revealed that 5 (5.2%) strongly agreed, 13 (13.4%) agreed, 12 (12.4%) were neutral, 54 (55.6%) disagreed and 13 (13.4%) strongly disagreed as shown in Table 4.21.

Table 4.21: Staff are Adequately Trained to Manage ICTs

	Frequency	**Percent**
Strongly Agree	5	5.2
Agree	13	13.4
Neither	12	12.4
Disagree	54	55.6
Strongly Disagree	13	13.4
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.3.7.3 Sufficiency of Experts for Handling ICTs' Issues

Respondents were requested to give their views on whether there were sufficient experts for handling ICTs' issues. Findings revealed that 5 (5.2%) strongly agreed, 11 (11.3%) agreed, 34 (35.1%) were neutral, 32(33.0%) disagreed and 15 (15.5%) strongly disagreed as presented in Table 4.22.

Table 4.22: There are Sufficient Experts for Handling ICTs' Issues

	Frequency	**Percent**
Strongly Agree	5	5.2
Agree	11	11.3
Neither	34	35.1
Disagree	32	33.0
Strongly Disagree	15	15.5
Total	**97**	**100.0**

Source: **Researcher's Field Data (2013)**

4.3.7.4 Availability of IT Systems and Facilities for the Storage of Information

The study intended to investigate the presence of IT systems and facilities for the storage of information their organization. Responses showed that, 7(7.2%) of respondents strongly agreed, 55(56.7%) agreed, 28 (28.9) were neutral, 4(4.1) % disagreed and 3 (3.1%) strongly disagreed. The results were as shown in Table 4.23.

Table 4.23: Availability of IT Systems and Facilities for the Storage of Information

	Frequency	**Percent**
Strongly Agree	7	7.2
Agree	55	56.7
Neither	28	28.9
Disagree	4	4.1
Strongly Disagree	3	3.1
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.3.7.5 Methods of Employee Access to Information

The study intended to investigate whether employees access their information manually or on line. Responses showed that, 25(25.8%) of respondents strongly agreed, 37(38.1%) agreed, 11 (11.3%) were neutral, 15(15.5) % disagreed and 9 (9.3%) strongly disagreed. The results were as shown in Table 4.24.

Table 4.24: Employees Access their Information Manually Rather than on Line

	Frequency	**Percent**
Strongly Agree	25	25.8
Agree	37	38.1
Neither	11	11.3
Disagree	15	15.5
Strongly Disagree	9	9.3
Total	**97**	**100.0**

Source: Researcher's Field Data (2013)

4.4 Analysis and Discussions of the Findings

This study employed qualitative method to collect, analyze, and interpret data. The findings presented and analyzed revealed the following results on development of Electronic Human Resource Management (e-HRM system) for public institutions in Tanzania. During data analysis, the ratings were measured using a five point Likert Scale where the different agreement/disagreement levels were rated as follows:

1- Strongly Agree; 2- Agree; 3- Neutral; 4- Disagree; 5- Strongly Disagree.

4.4.1 Analysis of the Findings on Technological Environment for e- HRM system Development in TCAA

The first research objective of this study was to assess the technological environment for e- HRM development in TCAA. This objective was measured by statements summarized in results as presented in Tables 4.5 and 4.9. Technological environment for e- HRM development in TCAA was analyzed using respondents' views by answering a set of questions.

Concerning whether there was computerized system performing activities electronically in TCAA, the results revealed that 80 (82.5%) of respondents agreed while 11 (11.3%) disagreed. Only 6(6.2%) of respondents were neutral. This shows that the majority of respondents were aware of the existence of computerized system that performed activities electronically within the organization. The implication is that TCAA has invested in ICT infrastructures to enable employees to use electronic system performing their daily activities within the organization. These findings correlate with the study conducted by Koh *et al.*, (2006) in which findings revealed that government agencies must evaluate how strategic e-HRM system plans are developed, communicated, and integrated into the work environment. Also the findings of the study by Mutiti (2002) showed that computers were used to fulfill a variety of recordkeeping functions, namely word processing, control of holdings, retrieval of records and document imaging. In this case employees should be well trained on the IT systems for the achievement of desired objectives.

The majority of respondents 55(56.7%) disagreed that TCAA management do take a leading role as regards online communication. 3(3.1%) of respondents strongly disagreed, 10(10.3%) of respondents were neutral, 23(23.7%) of respondents agreed and 6(6.2%) strongly agreed. This implies that TCAA management was not conversant in using computerized system in accomplishing their duties in the organization. This may be contributed by lack of training or they are used to pen and paper and as such they could not embrace new changes. This situation gives an alarm to management and other stakeholders to be aware in planning, implementing and evaluating training properly. This is because training focuses on improving the

qualities on knowledge, skills and abilities of employees. The findings concur with the study conducted by Mutiti (2002) who studied the application of computers in records and archives management in ESARBICA region. His study findings revealed that many archivists were not conversant with ways of managing electronic records.

Regarding presence of standards and procedures in operating ICTs, the majority of respondents (54.6%) agreed that standards and procedures in operating ICTs were available in TCAA. This implies that the management of the organization insists on standards and well-known procedures in operating ICTs within the organization so as to increase institution's efficiency. The findings are contrary to Sajane's findings (2004) whose study established that the public sector was no regulated by legislation, policies, strategies, and guidelines that specifically dealt with managing electronic records.

As regards the presence of procedure manuals for managing ICTs at TCAA, respondents who agreed (45.4%) where approximately equal to neutral respondents who were (41.2%). This implies that there is no clear cut demarcation that the organization has clear procedure manuals for proper management of ICTs within the institution. The findings concur with the study by Mnjama and Wamukoya (2007) who revealed that many governments have systems and procedures for managing paper-based records, but the same cannot be said for electronic records and other digital images. On whether TCAA had a section charged with the responsibility of managing the organization's ICTs, the majority of respondents who agreed were 81(83.5%). These findings are supported by the study of Strohmeier and Kabst

(2009) who noted that a designated section charged with the responsibility of managing the organization's ICTs should be available in an organization.

This show that TCAA as a government institution recognizes the importance of ICTs in for the daily execution of organization's tasks and has established a section charged with the responsibility of managing the organization's ICT systems. For technological environment to be conducive for e-HRM system development within any organization, it is important for such organization to invest in computerized systems and other ICT infrastructures which will enable online communications within and outside the organization. This can be achieved by establishing a sound ICT department with competent staff powered by modern technological skills and facilities for managing organization' ICTs.

The technology put in place and tasks to be done in government institutions must have a good match for acquiring better results and if the technology does not match with the tasks to be done it should be eliminated. Several issues in government management have to be addressed in order for e-HRM system to succeed. TTF model tells us that quality, local ability, authorization, ease of use or training, production timeliness, systems reliability and relationship with users are important factors in e-HRM system development, thus facilitating high level of compatibility in established systems.

It is very important to take into consideration the possibility and opportunity of integrating technologies that help institutions achieve its objectives. By doing this, it will make institutions more sustainable due to presence of conducive technological environment for participants to use technology (Firpo, 2006).

4.4.2 Analysis of the Findings on Management Support for e- HRM System Development in TCAA

The second research objective of this study was to measure the extent to which TCAA management supports e-HRM system development. This objective was measured by statements summarized in results as presented in Table 4.10 through Table 4.14. Management Support for e- HRM system development in TCAA was analyzed by using respondents' views as per the asked set of questions.

Concerning whether there are laws governing management of public sector ICTs, it was revealed that 48.5% of all respondents agreed but approximately the same percentage (45.4%) of all respondents were neutral. This shows that less than half of people within the organization were aware of laws governing management of public sector ICTs within their institution and less than half of respondents were not sure of the existence such laws for governing management of ICTs within organizations. (Tanzania Electronic and Postal Communication Act 2009**,** TCRA Act 2003). The findings are contrary to Sajane (2004) whose study established that the public sector did not only have legislation that specifically dealt with managing electronic records, but also lacked written policies, strategies and guidelines.

With respect to whether policies have been developed for managing ICTs at TCAA, respondents who agreed (38.1%) where approximately equal to respondents who were neutral (42.3%), while 19.6% disagreed. This implies that there were no clear and sound policies that have been developed for management of ICTs at TCAA. The findings concur with those of Mutula (2008) who concluded that several barriers

including lack of infrastructure, policy, legal and skill are limiting factors against the opportunity for sub-Saharan Africa governments to move services online.

On whether adequate budgets are set for ICTs' training and development, majority of respondents (64.0%) disagreed that adequate budgets were set for ICTs' training and development. This implies that management of TCAA does not provide adequate funding for ICTs training and development, that is, training of ICT experts and other employees and investing in ICT infrastructure and equipments. The findings concur with a study by Lau (2003) who found that e-HRM system development is affected by several factors including legislative, regulatory and budgetary barriers. Moreover, Sajane (2004) found that there were no qualified personnel with the expertise and skills to manage electronic records in the public sector and that the need for the public sector to allocate more resources for IT infrastructure, expertise training and policies formulating. ICT training and development is important for enabling organizations increase efficiency and effectiveness.

As regards whether there were policies that guide research and development in technological changes and institutional changes for innovation, it was found that majority of respondents (73.2%) disagreed to this. This shows that TCAA, as government institution, had no policies to guide/conduct research and development on technological changes and institution changes for innovation. The findings concur with those of Mutula (2008) who found that several barriers including lack of infrastructure, policy, legal and skill limited the opportunity for sub-Saharan Africa to move government services online.

On whether sound policy regarding selection of software system was available in TCAA, majority of respondents (51.5%) disagreed while 29.9% of all respondents were neutral and only while 18.5% agreed. This implies that there is no clear sound policy that has been developed regarding selection of software system for utilization of ICTs within the institution. The findings are supported by those of Sajane (2004) and Mutula (2008) which noted that there were no established clear policies, strategies and guidelines which creates barriers to e-HRM system implementation and development in ESARBICA region.

4.4.3 Analysis of the Findings on Regulatory Framework for e- HRM System Development in TCAA

The third research objective of this study aimed at measuring the impact of policy and regulatory frameworks on e- HRM system development in TCAA. This objective was measured by statements summarized in results as presented in table 4.15 to table 4.19. On whether there were regular migrations of information from one medium to another within the organization, majority of respondents (52.6%) disagreed while 28.9% of all respondents were neutral. This implies that, although there were computerized systems; management and other responsible personnel do not use effectively ICTs in communicating using available ICT mediums within the organization. Instead manual transfer of information is practiced mostly based on paper. Utilization of ICTs in migration of information serves time and reduces cost of operations and hence increases performance of organization. These findings are supported by those of Mnjama and Wamekoya (2007) which established that in many sub-Saharan Africa record keeping and migration of information is mostly

paper-based. Moreover, in his study on challenges of e-government development Lau (2003) found that external e-HRM system barriers are a result of breakdowns, missing components or lack of flexibility in the government-wide frameworks that enable e-services.

As to whether procedures for data migration are documented, the findings revealed that majority of respondents (59.8%) were neutral to this and only 24.7% of all respondents agreed. This shows that TCAA as government institution has no clear procedures for data migration documentation. The findings of the study concur with the study by Ngulube (2004) who found that South Africa and Kenya were the only countries that had procedures for the appraisal and disposal of electronic records, manuals and guidelines, for the management of electronic records in public agencies, as well as personnel with formal training in managing digital records.

South Africa was the only country with legislation that specifically addressed the management of electronic records and had procedures for periodically migrating records.

Majority of respondents (48.5%) were neutral while 33.0% of all respondents agreed that manuals provide procedures for managing activities in using ICTs. The study findings are supported by the report by Mutula (2008) who elaborated barriers for ICT development in public institutions which poor infrastructure, lack of clear policy and procedures for managing ICTs that limit the opportunity for institutions to move government services online. This implies that TCAA as government institution has no clear elaborated manuals which have procedures for managing stages of activities.

Regarding whether the system is protected from unauthorized access, findings revealed that majority of respondents (67.1%) agreed. The findings concur with those of Lau (2003) who cited internal challenges to affecting IT development as including the digital divide, privacy and security concerns. This shows that TCAA, as government institution, is aware of data security issues and protection of ICT systems from being invaded by system hawkers who may destroy the system or access confidential information of concerned personnel.

As to whether staff at TCAA were well trained about ICTs, majority of respondents (75.3%) disagreed. The findings concur with those of Ngulube (2004) whose study established that there was an acute shortage of staff trained to deal with information generated by modern computer technology. This implies that TCAA has no any programme to provide seminars or any training on organization ICT system.

4.4.4 Analysis of the Findings on General e-HRM system Development in TCAA

The majority of the respondents (46.4%) agreed that procedure manuals are reviewed to comply with ICTs' changes while 35.1% of all respondents were neutral. This implies that TCAA as government institution has clear programme to review procedure manuals in order to comply with ICTs' changes which are taking place rapidly throughout the world. The findings concur with those of Mnjama and Wamukoya (2007) on e-government and record management in public sector revealed that many governments in sub-Saharan countries have no systems and procedures for managing electronic records.

As to whether TCAA staff are adequately trained on how to manage ICTs, majority of respondents (69.0%) disagreed with this contention. This implies that TCAA had

no programme for providing training to its employees who could enable them manage the technological system within their departments. The findings are supported by those of Rue et al. (2007) who examined contribution of e-HRM system and HRM effectiveness. They established the importance of imparting ICT knowledge and skills to employees for effective e-HRM system development. Without the proper understanding of the importance of e-HRM system initiatives, employees cannot place high value on e-HRM system initiatives.

With respect to whether there were sufficient experts for handling ICTs' issues, majority of respondents (66.2%) disagreed. This implies that TCAA lacks adequate staff for handling ICTs' facilities. The findings agree with the study with those of Sajane (2004) who found that lack of qualified personnel with the expertise and skills to manage electronic records in the public sector is a problem and that there is a need for the public sector to allocate more resources for IT expertise training.

As regards whether there is IT system and facilities for the storage of information at TCAA, findings revealed that majority of respondents (63.9%) agreed to this. This shows that TCAA, as government institution, is aware of the importance of IT systems and facilities for the storage of information where it cannot be destroyed easily. The findings are supported by Laudon and Laudon (2006) in their book titled “Management Information system: The digital firm”. They elaborate that for organization to implement ICT systems, there must be adequate resources to support effective implementation and use of such systems. Resources include facilities, expertise, and other infrastructures.

Majority of respondents (63.8%) agreed that employees access organization's information manually and not online. The findings are supported by those of Mnjama and Wamekoya (2007) who established that in many sub-Saharan Africa record keeping and migration is mostly paper-based rather than electronic-based. This implies that TCAA management lack ICT skills. This may be attributed to lack of training or resistance to change as they are more used to pen and paper.

4.4.5 Discussions of the Findings

Respondents indicated that some of the questionnaire items were not applicable for them, or really difficult to answer, especially the items relating to policy, standards and procedures and therefore found it hard to give their opinion about issues relating to policy, standards and procedures in implementing and managing e-HRM system. This was noted in their answers. When the items had a subject related to policy, standards and procedures, majority of respondents checked "Neutral" for an answer. 'Neutral' is considered to have the same meaning as "I don't know" in this study. With regard to items related to management support, majority of respondents were either neutral or disagreed. As regards other items, approximately equal proportions of respondents disagreed or were neutral on the same items they answered respectively.

This implies that that top management support plays an important role in the development of e-HRM system. This on its turn affects the effectiveness of the e-HRM system in a positive way. It is important for management to fully support every activity in e-HRM system development including portioning adequate fund for

implementing e-HRM system and for the procurement of facilities and training of experts and employees (Strohmeier and Kabst, 2009). The provision of sophisticated e-HRM system activities is useless when there are no good policies and when the support for the e-HRM system activity is poor.

The issue of training employees and managers on ICT skills was found to be of much importance in TCAA. It is clear that the necessity of training in the use of e-HRM system technology should not be underestimated, especially for managers and other important end-users. TCAA managers were observed to lack the capability to perform the e-HRM system activities as they hadn't enough ICT skills. However, this could have been caused by the poor support on ICT issues on the part of TCAA top management. Therefore, the researcher recommends that a well designed ICT training programme should be in place focusing on providing training to all employees and managers. This kind of training might positively accelerate e-HRM system development and use.

Since development of e-HRM system institutes changes, the process requires technology, management support and well-planned regulatory framework. There is a big chance of success or failure depending on how these three elements are handled. The theory of change management informs us that change must be planned with a series of stages. The first stage involves government plans through setting policies and procedures for management purposes. Secondly, implementation of the formulated plans using appropriate technologies to facilitate changes. Thirdly, refreezing, that is making a change permanent by follow up through regulatory frameworks. Government organs have to reinforce the changes and make sure that

the intended changes in IT are accepted and maintained in the future for existence and continuity; as per change management theory of Lewin (1947).

Although technology is very important in simplifying users operations, there are several challenges facing usage of such technologies, namely: non-fit technology, poor infrastructure and lack of knowledge of users attitudes, beliefs, environment, security, ease of use, product/service usefulness, intentions, behavior and other factors - as Kolsaker & Kelly (2008) concluded in their study on attitudes towards e-government. However, technology must have tangible benefit when used with the aim of improving operations of users and therefore enhancing the performance of the organization.

The e-HRM system delivers routine but essential HR processes and that it has the potential to eliminate non value-added work as concluded by LawlerIII (2005) in his study on the impact of e-HRM system on organizational effectiveness. In this case, paper works (mostly clerical) and transaction expenses are reduced. The e-HRM system also speeds up transaction processes, which result in time savings. Through automation, productivity is improved and less people are necessary to perform the same task. The e-HRM system provides access to information and the information is easier to disseminate. The HR staff can be more responsive and has access to more accurate information which results in more efficiency. The e-HRM system improves the efficiency of the organization by reducing costs, time and resources necessary to perform the same activity. The effectiveness of HRM is expected to increase due to e-HRM system. The combination of e-HRM system and HRM might be perceived as

unique because of the many opportunities to customize it for the organization. Error potential shall be reduced, timeliness shall increase, HR response time and data accuracy shall improve and the capabilities of managers and employees shall also be improved. Therefore, the service quality of the HR department shall also increase. The efficiency is expected to improve through time savings, cost reductions, improved decision making, and increased information quality. Thus e-HRM system helps to increase the efficiency of the organization.

CHAPTER FIVE

5.0 CONCLUSIONS AND IMPLICATIONS

5.1 Introduction

The summary of findings from the study are presented in this chapter. The chapter starts by presenting the summary of research questions, conclusion on research problem, conclusion based on research objectives, implications for theories, implications for policy and practice, and finally indicates study limitations, and implications for further research.

5.2 Summary of the Research Problem

The focus of this study was to evaluate development of Electronic Human Resource Management (e-HRM system) for public institutions in Tanzania**,** in terms of three key constructs; presence of technological environment for e- HRM system development, management support for e-HRM system development and implementation of policy and regulatory frameworks associated with e-HRM system development. At present, many institutions in the world have adopted various technologies in their daily operations expecting to get various benefits obtained from implementing such technologies. The research problem of this study was to find out whether government institution benefit from their implementation of HRM technologies and innovation of various products such as e-recruitment, performance appraisal etc. Development of e-HRM system technology is affected by various factors such as level of technology investment, top management decisions, involvement of employees, training, issues of policies and so many others. Findings

and conclusions of various studies show that there has been much debate on whether or not the implementation of ICTs improves an institutions' performance. There a number of empirical evidences explaining the existence of direct relationship between implementation of technology and institutions improvement. Implementation of e-HRM system has the potential to improving the institutions position and organizations to have more competitive forces (Chau & Tam, 1997).

5.3 Conclusion of Research Problem

This research aimed at evaluating development of Electronic Human Resource Management (e-HRM system) for public institutions as to increase efficiency and effectiveness in provision of HRM services. Development of technology in the institutions is faced with the major constraints such as cost of software, lack of expertise, lack of training and the reliability of the system and lack of management support and infrastructures.

The findings which are consistent with the literature found in chapter two of this study indicated that the development of e-HRM system increases competitive advantage of the institution. This means that, emphasizing on implementation and development of e-HRM system technology in institutions will have great influence on overall performance and tackle challenges associated with efficiency and effectiveness in provision of HRM services.

This implies that management should implement modern information technology which serves to enhance both the efficiency and effectiveness of institutions e-HRM

system services. Managements should also emphasize on complementary in skills and human capital, training in information technology skills of employees and support development processes by setting adequate budget for development of e-HRM system in the institutions, the factors which are of crucial importance for the development of HRM technology.

5.4 Conclusion on the Research Objectives

This study was guided by three research objectives regarding technological environment, management support and regulatory framework towards e-HRM system development in public institutions.

Objective 1**:** To assess the technological environment for e- HRM system development in government institution

The findings established that availability of conducive technological environment in institutions which constitutes well established computerized system; ICT infrastructures and prominent ICT section positively influence implementation and development of e-HRM system. Also presence of ICT experts, knowledgeable employees and managers on ICTs issues allow effective communications in institutions.

Objective 2: To measure to what extent TCAA management supports e-HRM system development in government institution. This study found that setting adequate budget for ICTs - which include research and development, training of ICT experts, employees and managers, is important factor for e-HRM system development in

institutions. Proper selection of ICTs which fit the organization operations is also an important factor that management has to consider. Proper training of ICTs issues to users helps them to manage changes and new applications, working in a friendly manner with management. These most significant variables were found to be critical in e-HRM system technology innovation and implementation which need top management support. In any organization, the primary decision maker is the management of the organization, and its support is important in development of e-HRM system technology.

Objective 3: To examine the availability and implementation of policy and regulatory frameworks associated with e-HRM system development in government institution.

Regulatory framework which regulates implementation of ICTs is important because of the crucial roles it plays in ensuring proper operations of ICT systems in organizations. Findings showed that the relevance of e-HRM system current option, management support and formulation of ICT policies has positive influence on implementation and development of the e-HRM system technology. In addition, regulations and procedures and policies of the organization have positive influence on implementation and development of the e-HRM system technology.

The study has shown that development of e-HRM system increases competitive advantage of institutions. It was found that availability of technological environment, management support and presence of ICTs regulatory framework have significant impact on development of e-HRM system in institutions. Laudon and Laudon (1991)

argued that managers cannot ignore information system because they play a critical role in contemporary organizations. Therefore it is important for institutions to implement and develop reliable and relevant e-HRM system software and hardware for maintaining various operations and other associated services which must be in accordance with their policy.

5.5 Implications for the Theories

The study used IT theories which focus on adoption and development of the ICTs in institutions with reference to technological environment, management support and regulatory framework. The theories include: Change management theory, Task technology fit theory, Technology acceptance model and Processes of Technological Innovation theory.

Change management theory explains that, development of technology in the organization involves three steps which include state of becoming motivated to change, then to change what needs to be changed and finally making the change permanent. According to this theory management should prepare good technological environment for development of e-HRM system, giving full support by providing adequate fund for facilities and training. Sound policies and regulations should be formulated and revisited to accelerate the rate of e-HRM system implementation in government institutions.

Task technology fit theory signifies that e-HRM system development have a positive impact on organization’s performance if the capabilities of the ICT match the tasks

that the user must perform. The theory emphasizes that use of technology in an organization is likely to have an impact on performance improvement if such technology in use is designed to fit tasks performed by individuals within the organization.

Technology acceptance model postulates that the use of an information system is determined by the behavior intention; on the other hand, the behavior intention is determined by the person's attitude towards the use of the system and also by his perception of its utility. For this case the theory emphasizes on willingness and readiness of management to be committed in supporting development of e-HRM system in their institutions.

According to Lee *et al.*, (2003), diffusion of innovations theory is a powerful tool and gives solid theoretical background for explaining the implementation of electronic technologies including e-HRM system. The theory is very important to this study since it explains comparative advantage, complexity and compatibility as key the factors of greater importance in adoption of IS system. For the implementation and development to be successful the e-HRM system must be compatible to the need of users to satisfy such needs. Hence for implementation of e-HRM system to be successful, organizations should consider the above factors explained.

According to Tornatzky and Fleisher (1990), the Processes of Technological Innovation which a firm adopts and implements is influenced by the technological

context, the organizational context, and the environmental context. The technological context includes technologies that are relevant to the firm. The organizational context refers to the characteristics and resources of the firm including degree of formalization, managerial structure, Human Resource and linkages among employees. The environmental context includes the size and structure of the industry, the firm's competitors, the macroeconomic context, and the regulatory environment. Thus institutions' management are obliged to create conducive technological environment, supporting ICTs implementation and administering regulations and procedures for successful development of e-HRM system in the institution.

5.6 Implications for Policy and Practice

The study focused on development of e-HRM system in government institutions in Tanzania, a case of Tanzania Civil Aviation Authority. It explored the development of e-HRM system in government institutions as regards the provision of services considering presence of technological environment, management support and regulatory framework in development of e-HRM system development. By implementation of relevant e-HRM system institutions performance is expected to increase. This study will help policy makers prepare best policies on proper technology usage by institutions thus enabling them to extend their services to many people at affordable cost. To do this, decision makers should invest in appropriate systems compatible with the organization's needs. The government as the policy maker has to review the national ICT policy enable effective and viable usage of compatible technologies in public institutions. Training employees to acquire skills technology is highly recommended in order to enable them to accept changes.

Technology is changing very fast, which can results in making changes to the systems used. Change of the system means to employees must get intensive training and managers should be able to cope with such a change. The e-HRM system which fit the organization should be available and should be used effectively so as to show great impact on the development of the country.

5.6.1 Private Sector Managers

The management should be aware about why deliberate effort is required to bring about development of e-HRM system technology. Management plays a critical role in adopting systems that radicalize organizational change. They should recognize their organization's technology resources and assess its needs for relevant system application. They should also be able to forecast the future of their organization. Top management should consider technology usages throughout the organizational levels and try to expose its positive impacts in their institutions. Further still, this study indicates that appropriate e-HRM system technology that fits the institution's tasks should be developed to provide quality HRM services and products that can be easily accessed by all employees and other stakeholders. Decision makers should therefore ensure that institutions should invest in relevant technologies after thorough and careful assessment of their requirements. Requirements should be addressed in line within the perspective of current needs and future plans.

5.6.2 Public Sector Policy Analysts and Managers

This research has considerable implications to policy makers since it shows the importance of formulating or to revise a regulatory framework for managing e-HRM system in government institutions. This research will be a basis to appropriate

technology implementation for sustainable competitive advantage. The National ICT policy of 2003 should be regularly revisited to provide a national framework that will emphasize on relevant use of technology by institutions in order to contribute towards achieving national development goals. The policy should be updated from time to time and that implementation strategies and plans should be drawn and carried out in the most efficient and effective manner. Progressive policies that make e-HRM system technology easily used and secure information are important for development of e-HRM system in Tanzania.

5.7 Limitations and Implications for Further Research

Limitations pertaining to research cannot be totally avoided. The available data are limited to only one government institution (TCAA). Therefore the research questions of this research can be further retested to include many other institutions so as to compare the findings with the findings of this research. In addition, the level of technology development may be influenced with various factors which have not been considered in this research and which may also differ from one institution to another within Tanzania. Therefore limitations and shortcoming of this study provide the gap for future research.

5.8 Areas for Further Research

Another research should be conducted as regards factors for technology development in institutions. Such research should study - among other things, the technological environment, management support, user involvement in acquisition, ICT skill training, perceived ease of use, behavioural and attitudinal components, customs and

belief, trust, infrastructure, user environment etc which might as well have a significant influence on development of e-HRM system in government institutions.

5.9 Lesson Learned

It is important to select a proper model to be used to analyse data right from the time of research design to data analysis and presentation. The model which was applied for this research was useful in reaching the conclusions. Modern research requires application of modern tools to reach a conclusion. Therefore, proper selection of model that fits a certain research setup is very important. Also time management and cooperation with supervisor and other colleagues is an important factor in the course conducting research.

REFERENCES

Baradyana, J., & Ame, A. (2005). Quantitative techniques for Business Decisions. Dar es Salaam: Mkuki & Nyota Publishers Ltd.

Burns, P. (2000). Service consistency accross channels is a key success. American Banker Vol. 165 , 4-6.

Carmines, E. G., & Zeller, R. A. (1979). Reliability and Validity Assessment. London: Sage Publications, Inc.

Crestone, C. (2009). HR Systems Survey. HR Technologies,ServiceDelivery Approaches & Metrics .

Cronbanch, L., & Richard, J. (2004). My current thoughts on coefficient alpha and successor procedures. Educational and Psychological measurement Vol. 64 No.3 , 319-418.

Davis, F. D. (1989). Perceived usefulness, Perceived Ease of Use and ser Acceptance of Information Technology. MIS Quarterly, Vol 13 NO. 3 , 13 (3), 319-339.

Fang, Z. (2002). E-government in Digital Era: Concept, Practice and Development. International Journal of The Computer, The Internet and Management Vol. 10 No. 2 , 1-22.

Fishbein, M., & Ajzen, I. (1975). Belief, Attitude, Intention and Behavior; An Introduction to Theory and Research. Ontario: Addison-Wesley.

Frankiewcz, C. (2003). Information Technology as strategic tool for microfinance for Africa. Nairobi: Calmeadow.

Goodhue, D. L., & Thompson, R. L. (1995). Information and Decision Science Research. USA: University of Minneapolis.

Internatinal Development Research. (2009). From e-goverment to e-governance. Retrieved March 22nd, 2011, from idrc.ca: http://www.idrc.ca/en/ev-115662-201-1-DO-TOPIC.utml

Jarvinen, P. (2004, December 17). Research questions guiding selection of an appropriate research method. Retrieved May 23, 2011, from University of Tampere web site: http://www.cs.uta.fi

Kimweri, H. S. (2012), Assessing the effectiveness of workers motivation towards job performance in Public universities in Tanzania: A case of Dar es Salaam University College of Education.

Koh, C. E., Prybutok, V. R., Ryan, S., & Ibragimova, B. (2006). The importance of strategic readiness in an emerging e-government environment. Business Process Management Journal Vol. 12 No. 1 , 22-33.

Kolsaker, A., & Kelly, L. (2008). Attitudes towards e-Government. International Jouranal of Public Sector Management Vol. 21 No.7 , 723-738.

Kothari, C. R. (2005). Research Methodology: Methods & Techniquies. New Delhi: K. K. Gupterfor New Age International (P) Ltd.

Lau, E. (2003). Challenges for E-government Development. Mexico: Organization for Economic Co-operation and Development.

Laudon, K. C., & Laudon, J. P. (2006). Management Information System. USA: Pearson Education, Inc.

LawlerIII, E. E. (2005). From Human Resouce Management to organizational effectiveness. Human Resource Management vol.44 No.2 , 165-169.

Lewin, K. (1947). Group Decision and Social Change. England: Henry Holt & Co.

May, T. (1998). Social Research: Issues, Methods and Processes. Buckingham: Open University Press.

Ministry of Communication and Transport. (2003). National ICT Policy. Dar es Salaam: URT.

Mnjama, N., & Wamukoya, J. (2007). E-government and Record Management: an assessment tool for e-records management in government. The Electronic Library Vol. 25 No. 3 , 274-284.

Mutiti, N. (2002). Computerisation of archieves and records in ESARBICA region. ESARBICA journal Vol 21 , 114-119.

Mutula, S. M. (2008). Comparison of Sub-Saharan Africa. Information Management and Computer Security Vol. 16 No. 3 , 235-250.

Mutula, S. M. (2010). Deploying Development Informatics in Bridging the Digital Divide, Challenges and Opportunities. 11th DIS Annual Conference. Richardsbay: University of Zululand.

Ngulube, P. (2004). 'A double edge sword :Challenges and offered by digital edge to the African Information society . Progress of information technology adoption , 28-31.

Othman, R. (2007). On developing the Informated work place: HRM issues in Malaysia. Human Resource Management Review , 393-406.

Pataraporn, J. (2007, February 9). Survey research and Focus group interview. Retrieved May 23, 2011, from Knowledge center web site: http://www.bu.ac

Piggot, S. (2002). Evidence based governance in the electronic age. Jamaica: The World Bank.

Ruel, H., Bondarouk, T. V., & Vn Der Velde, M. (2007). The Contribution of e-HRM system to HRM effectiveness: Results from aquantitative study in Dutch ministry. Employee Relations vol. 3 , 280-291.

Sajane, L. (2004). " An investigation into management of electronic records in the public sector". Journal of record management , 13-17.

Saunders, M., Lewis, P., & Thornhill, A. (2003). Research Methods for Business Students. India: Pearson Education Ltd.

Saunders, M., Thornhill, A., & Lewis, P. (2009). Researchmethods for Business students. London: Prentice Hall.

Sawe, D. (2007). how societies benefit from open access to ICT. the President Office - Public Service, (p. 15). Dar es salaam.

Schein, E. H. (1999). The Corporate Culture Survival Guide. Jossey-Bass.

Sen, A., & Srivastava, M. (1990). Regression Analysis: Theory, Methods and Applications. New York: Springer Verlag.

Strohmeier, S. (2007). Research in e-HRM: Review and Implications. Management review Vol17 No.1 , 19-37.

Tornatzky, L., & Fleisher, M. (1990). The process of Technological innovation. Massachusetts: Lexington.

United Nations. (2005). Global E-goverrnment Readiness: From E-government to E-inclusion. New York: UN.

United Republic of Tanzania. (2003). National ICTs Policy. Dar es Salaam: Ministru of Communication and Transport.

United Republic of Tanzania. (2009). Tanzania E-government Strategy. Dar es Salaam: President's Office - Public Service Management.

Venkatesh, V., & Davis, F. (2000). A Theoretical extension of the Technology acceptance model: Four longtudinal field studies. Management science , 186-204.

Vreede, G. D., Jones, N., & Mgaya, R. (1999). Exploring the application and acceptance of group support systems in Tanzania. Management Information Systems Vol. 15 No. 3 , 197-234.

Wato, R. (2005). E-records readness in the region: Challenges and the way foward. Journal of Archieves and records in the information society. , 25-29.

West, D. M. (2006). Global E-government . Retrieved March 31, 2011, from Inside Politics: http://www.InsidePolitics.org

World Information Society Report. (2006). Digital Opportunity Index. SPU Publishers.

APPENDICES

Appendix 1: Questionnaire

Dear respondent,

This questionnaire has been developed to facilitate a research on “Development of e-HRM system in Government Institutions” A case of TCAA, which is a requirement for the fulfillment of MBA studies from the Open University of Tanzania. The questionnaire intends to deduce your opinion on Information Communication Technologies (ICTs) at your work place. Please note that, there is no right or wrong answer. The intention is to collect your opinions regarding your experiences in daily operations. The information obtained will only be used for academic purposes and treated with utmost confidentiality. Thank you in advance for your cooperation and valuable time.

Question 1: Demographic

Please put a tick (√) for the selected answer

1. Sex: Male ☐ Female ☐

2. Job category: ATCO ☐ AIO ☐ IT ☐ Part of management ☐

Others specify……..…

3. Age:

Below 20 years ☐ 21-30Years ☐ 31 -40years ☐

41 – 50 years ☐ Above 50 ☐

Please put a tick (√) for the selected answer in a space provided for the following Questions whereby,

1	2	3	4	5
Strongly agree	Agree	Neither	Disagree	Strongly Disagree

Question 2	1	2	3	4	5
i. There is a computerized system performing activities electronically					
ii. Management staff do take lead on online communication					
iii. There are standards and procedures in operating ICTs					
iv. TCAA procedure manuals exist for managing ICTs					
v. TCAA has a section which has been charged with the responsibility of managing organization ICTs					

Question 3	1	2	3	4	5
i. There are laws governing the management of public sector ICTs					
ii. Sound Policies have been developed for the management of ICTs					
iii. Adequate Budgets are set on ICTs' training and development					
iv. There are policies to conduct research and development					

on technological changes and institution of changes for innovation					
v. Sound Policy regarding the selection of software systems is available					
Question 4	1	2	3	4	5
i. There are regular migration of information from one medium to another					
ii. Procedures for data migration are documented					
iii. Manuals provide procedures for managing stages of activities					
iv. The system is protected against unauthorized access					
v. Staff are well informed on ICTs' strategies					

Question 5	1	2	3	4	5
i. Procedure manuals are reviewed to comply with ICTs' changes					
ii. Staff are adequately trained to manage ICTs					
iii. There are sufficient experts for handling ICTs' issues					
iv There are IT systems and facilities for the storage of information					
v. Employees access their information manually rather than on line					